

LAVOULA

OF MONTREAL

73-74

university calendar

ARTS
COMMERCE
ENGINEERING
SCIENCE



Loyola
OF MONTREAL

1973—74

Ad Maiorem Dei Gloriam.

UNIVERSITY CALENDAR: Arts, Commerce, Engineering, Science.

Loyola of Montreal, 7141 Sherbrooke Street West, Montreal, Quebec.

Telephone (Area Code 514) 482-0320

Academic Calendar 1973-74

1973

			REGISTRATION (9:30 a.m. - 12:30 p.m.)	
September	Tuesday	4	University III students (all faculties).	
	Wednesday	5	University II students (all faculties).	
	Thursday	6	University I students (all faculties).	
	Friday	7	Collegial II students (faculties of Commerce Engineering, and Science).	
	Saturday	8	Collegial II students (Arts).	
	Tuesday	11	First term lectures begin. Late registration begins.	
	Friday	14	Last day for late registration.	
	Friday	28	Last day for adding full courses and first term half courses.	
October	Monday	8	Thanksgiving Day - Full Holiday.	
	Sunday	28	Fall Convocation.	
	Wednesday	31	Last day for dropping first term half courses.	
December	Monday	3	Last day for making application to enter second term - 1973/74 academic year - January 1974 registration.	
	Friday	7	First term lectures end.	
	Monday	10	Final examinations for first term courses begin.	
	Friday	21	Final examinations end.	

1974

January	Thursday	3	Registration for new students begins. Course changes for second term begins.	
	Thursday	10	Second term lectures begin.	
	Friday	18	Last day for adding second term half courses.	
			Fr. President's Holidays (Thursday and Friday) - dates to be announced.	
February	Thursday	28	Last day for dropping full courses, and second term half courses.	
March	Tuesday	12	Founder's Day.	
April	Wednesday	10	Last day of lectures.	
	Thursday	11	Easter recess begins.	
	Tuesday	16	Final examinations begin.	
May	Friday	3	Last day for submitting documents needed to justify aegrotat standing and special examinations.	
	Friday	31	Last day for making application to enter 1974/75 academic year - September 1974 registration. Official student appeals concerning grades must be made within two weeks of the mailing of marks from the Records Office.	
June	Saturday	1	Convocation.	
July	Monday	15	Last day for making appeal to repeat year. Last day for making application to write supplemental and special examinations.	
August	Monday	5	Supplemental and special examinations begin.	

Loyola

Loyola has come a long way since its origin as a small exclusive college based on aristocratic tradition. Loyola began its own separate existence in 1899 when it was incorporated by an Act of the Quebec Legislature, although its origins can be traced back as far as the mid-century.

In keeping with the time, emphasis was placed on the development of leaders by concentrating on the education of the children of the privileged few.

Things have changed.

The Jesuits of the 1940's initiated the first steps of the transition. They envisioned a new kind of Catholic University that would cross class lines and produce leaders from all segments of the community. Slowly Loyola began to shed its classical college tradition.

By the mid-fifties, Loyola had emerged from being a small classical 400-student college into a modern, complex university with 5,000 day students, 6,000 evening students, and 3,000 summer students.

As Loyola and Loyola students continue to explore and question, Loyola continues to grow and change. The concept of educating leaders that has predominated in Loyola history still exists and the achievement of self-realization through learning excellence is still a primary goal. But Loyola today is concerned not with merely producing leaders, but rather with allowing each individual to develop his own qualities of leadership.

Loyola and Sir George Williams

Some students at Loyola already take one or more courses at Sir George Williams or McGill in order to extend their Loyola programme.

A union is now being negotiated with Sir George Williams. When the new university has been established increased resources and opportunities will be at our disposal.

This catalogue presents only those courses and programmes which are already available. There may be occasion to publish some supplemental material when the union takes place, possibly before lectures resume in September 1973.

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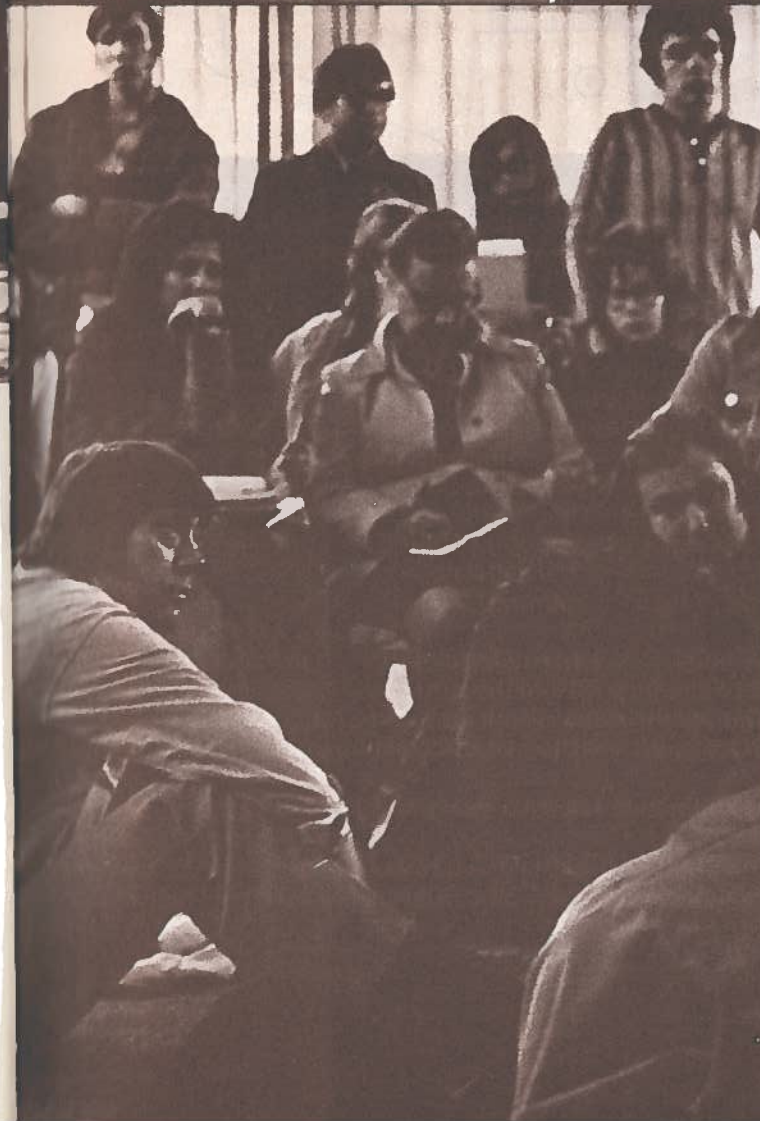
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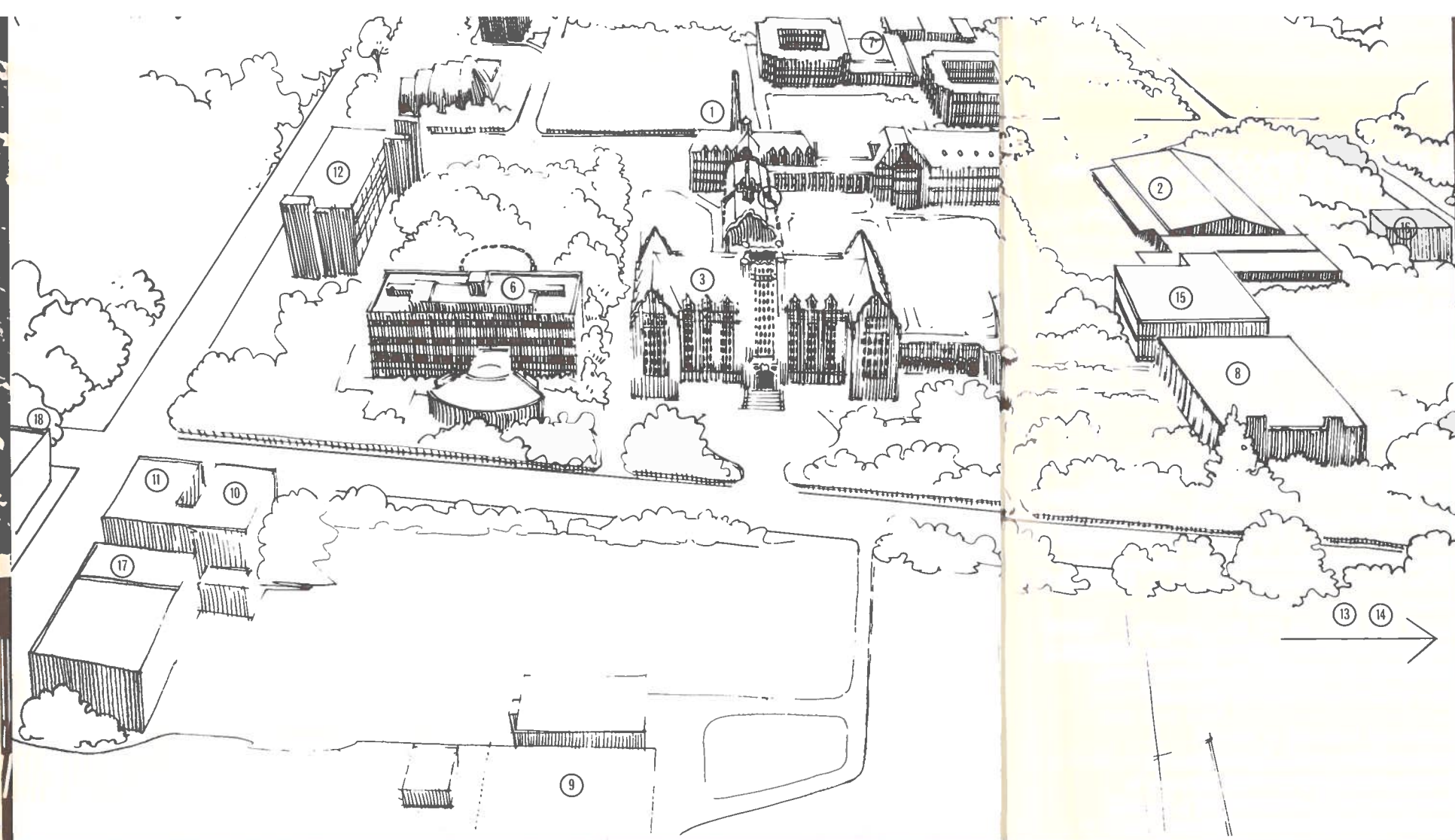
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The Loyola Community

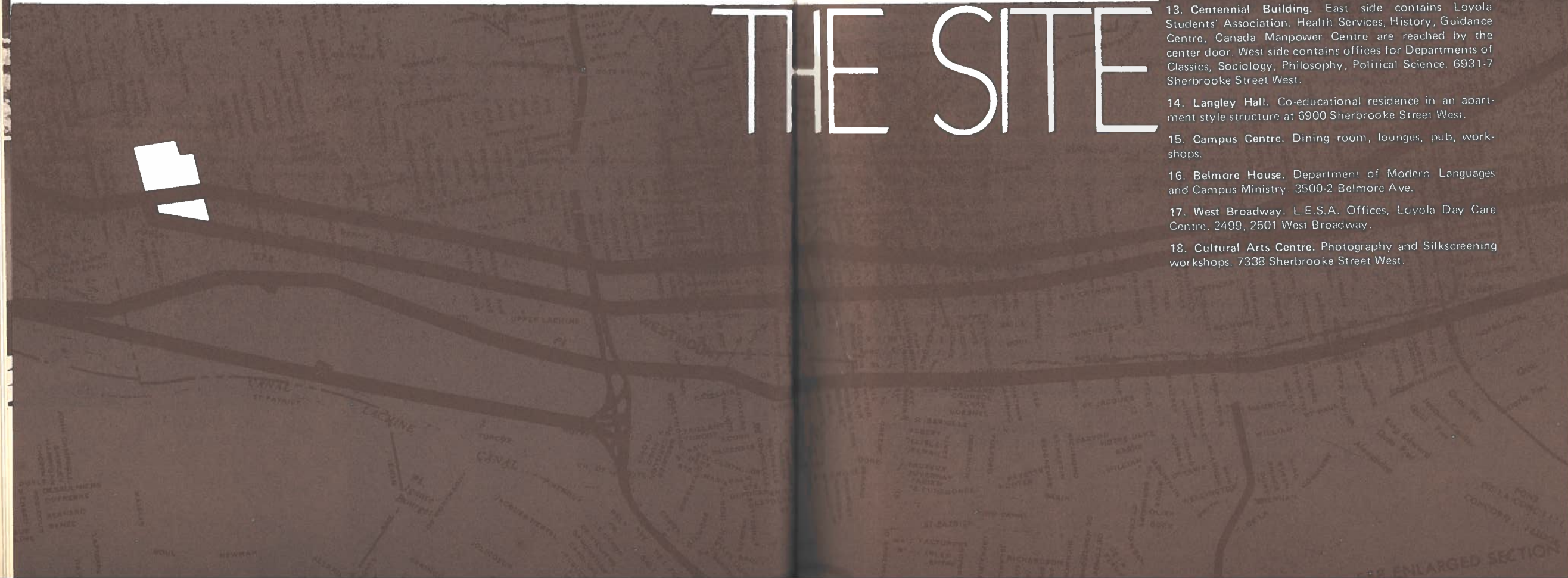
Small.
Informal.
Flexible. The aim of Loyola is not to have the students conform to the needs of the college. Rather, the college should conform to the needs of the student. Loyola is small enough to listen to what students have to say, and flexible enough to be able to do something about it. The balance has been created between a friendly, informal atmosphere that respects a student's individuality, and a well-equipped educational institution with an academic program that is recognized by graduate and professional schools throughout Canada, the United States, and Europe.





1. **Refectory.** Student Dining Hall, Offices for Department of Computer Science, Faculty of Engineering, and Fine Arts Programme.
2. **Physical Services Building.** Contains "The Caf", and University Bookstore.
3. **Administration Building.** Student Services, Financial Aid, Security, Lost and Found, Accounts Receivable, Public Relations, Development, President's Office, and Classrooms.
4. **F. C. Smith Auditorium.** The largest auditorium on campus. The Loyola Chapel is located above.
5. **Central Building.** Registrar, Admissions Office, Academic Vice President, Guadagni Student Lounge, Dean of Arts, Dean of Commerce, Classrooms, Language & Learning Centre Labs, Engineering & Computer Labs.
6. **Drummond Science Building.** Contains most Science Faculty, laboratories and classrooms. Also includes Science Library, Dean of Science, Offices and Drummond Auditorium.
7. **Hingston Hall.** Co-educational residence with recreational facilities, dining room, study rooms and offices for Departments of English, French, and Theology, Legal Aid, Director of Collegial Studies, Interdisciplinary Studies, University Student Senators' Office, Faculty Club, Faculty & Staff dining room.
8. **Georges P. Vanier Building.** Contains the large, modern Georges P. Vanier Library, one of the most well-equipped libraries in Montreal.
9. **Physical Education Centre.** Large athletic complex includes gymnasium, ice arena, all athletic facilities, and Athletic Department offices.
10. **Hackett Building.** Evening Division Offices, Alumni Association Offices, Mathematics Department.
11. **Cloran Building.** Offices for the Departments of Accounting, Business Administration, Economics.
12. **Bryan Building.** Classrooms, offices and laboratories for Communication Arts and Psychology.
13. **Centennial Building.** East side contains Loyola Students' Association, Health Services, History, Guidance Centre, Canada Manpower Centre are reached by the center door. West side contains offices for Departments of Classics, Sociology, Philosophy, Political Science. 6931-7 Sherbrooke Street West.
14. **Langley Hall.** Co-educational residence in an apartment style structure at 6900 Sherbrooke Street West.
15. **Campus Centre.** Dining room, lounges, pub, work-shops.
16. **Belmore House.** Department of Modern Languages and Campus Ministry. 3500-2 Belmore Ave.
17. **West Broadway.** L.E.S.A. Offices, Loyola Day Care Centre. 2499, 2501 West Broadway.
18. **Cultural Arts Centre.** Photography and Silkscreening workshops. 7338 Sherbrooke Street West.

THE SITE



The Facilities

Lecture and Seminar Rooms

The 69 lecture rooms have a total seating capacity of 3,423. The 10 seminars can hold 163. There are four auditoriums at Loyola, with a total seating capacity of 1,225. The largest of these, the F. C. Smith Auditorium, seats 570.

Laboratories

The 65,000 square feet of floor space devoted to laboratories allows 1,248 students to use these facilities at one time. This includes labs for Chemistry, Physics, Engineering, Geology and Biology. There is also the calculating room which seats 25, and 2 well-equipped language labs with a total seating capacity of 65.

The Computing Centre provides a range of facilities to meet the requirements of students, faculty and administration.

The Bryan Building houses the Psychology Labs, which include Human Learning Labs and Surgery Rooms.

The laboratories for Communication Arts contain a TV studio, projection room, multi-media room, film editing facilities, and a complete photography studio.

Libraries

Loyola's two libraries provide resources and services for the college's students and teaching faculty. The resources include approximately 170,000 volumes; selected Canadian, Quebec and foreign government documents; films and slides, microfilm, and subscriptions to about 3,500 serial publications.

The three floors of the Georges P. Vanier Library house the general collection and the technical services departments. The Film Library is located on the basement floor. The Vanier Library also houses a Special Collection which includes Loyola publications and valuable books, the Masonic Collection, the Africa Collection, and the D'Arcy McGee Collection. Another attraction in the library is the reproduction of Michelangelo's statue of David. The Reference Department on the main floor provides assistance in using all the resources of the library.

Hours: Monday to Friday 8:00 A.M. — 11:30 P.M.
Saturday & Sunday 9:00 A.M. — 5:00 P.M.

The Science Library in the Drummond Science Building serves the students and teaching staff of Loyola's science faculty. The library provides books and periodicals, as well as reference services for members of the Loyola Community.

Hours: Monday to Friday 8:00 A.M. — 10:00 P.M.
Saturday 9:00 A.M. — 5:00 P.M.
Sunday 2:00 P.M. — 6:00 P.M.

Residence:

HINGSTON HALL This modern co-educational residence hall can accommodate 145 students in 67 single rooms and 39 double rooms. The two four-floor wings are centered by the main entrance and common lounge. The complex also includes recreational facilities, study rooms, and offices.

The room contract covers the rental of linen, blankets, and pillows.

LANGLEY HALL Co-educational living in an apartment-style structure is provided for 96 students in 55 single rooms, 19 double rooms, and 3 singles with washroom facilities.

OFF CAMPUS HOUSING POLICY Like most colleges, Loyola regulations require that all freshmen under 21 not living with their parents or legal guardian must live in residence. There will, of course, be cases which provide sufficient reason for exceptions to be made. This is decided by the Director of Housing. All students living off campus, but not at home, must list their address with the Dean of Students Office.

Note:

Admission to the college *does not* guarantee admission to residence. If you wish to reside on campus contact the Director of Housing. Since space is very limited, it is your advantage to make an early application.

Student Services and Related Services

DIVISION OF STUDENT SERVICES

DEAN

A. AUDET

The Division of Student Services is that dimension of the College staff who work, on a day-to-day basis, primarily with:

- Specialized Services to Students
- Learning Opportunities Outside the Classroom
- Campus Life in General

The objective of the Student Services staff is to work with others in making life on campus an educationally rewarding, exciting and enjoyable experience.

People in Student Services are not teachers or students or administrators "per se". They ARE counsellors, community workers, doctors, nurses, program consultants, organizational resource people, and educators in a broad sense. Their approach in their work is to OFFER their skills and experience to those who need and want their help.

Guidance Centre

Individuality is a key word at Loyola, and all students are encouraged to use their university life as a time to get to know themselves better, and to develop their own individual potential to the fullest. With this aim in mind, the Guidance Centre is geared to offer assistance in many forms, and for many reasons.

How productive are your study habits?
Could you improve your reading techniques?
What are your thoughts about a career?
Is graduate work a possibility?
Are you relating to people to your satisfaction?
What kind of person are you?
Could psychological tests help you?

There may be many questions that the Guidance Centre can help you answer. There may be many problems that can be minimized by discussing them with an understanding counselor. You can do so with the understanding that everything between you and your counselor is strictly confidential. You don't need to have a problem to come to the Centre. It is your Centre. You are invited and encouraged to make the fullest use of its facilities.

The Guidance Centre is in the Centennial Building at 6935 Sherbrooke Street West.

Health Services
M. Wheeler
Located in the Centennial Building across the hall from the Guidance Centre, Health Services is open to all students for confidential health care, information and advice from 9 a.m. to 5 p.m. Monday through Friday. There are two registered nurses and five doctors of different specialties who come in at varying times throughout the week. Drop in or call local 480 any time — it could prove useful.

Foreign Students' Insurance
B. Counihan
Students who are neither Canadian citizens nor landed immigrants are not eligible for the provincial medical program. The high cost of hospital care in Quebec has prompted the College to arrange for an insurance policy which covers hospital expenses up to \$5,000.00 incurred as the result of accidental injury or an illness.

The premium for this policy is \$37.00; it is included in your fees. This policy is required of all Foreign Students. Students from the United States who have comparable coverage at home may be exempted. For details about the coverage or exemption, contact the Foreign Student Advisor at Student Services.

Financial Aid

F. Haffey Scholarships
A scholarship is awarded in recognition of outstanding academic achievement. A scholarship winner is given the title of "Loyola Scholar". Scholarships are renewable if the Scholarship Committee feels that the holders have maintained a sufficiently high standing. No student with supplemental examinations will be eligible for a scholarship, or for its renewal.

If a student holding a scholarship decides to change faculty, he will retain the scholarship only on condition that he receives the approval of the Scholarship Committee.

No student may hold more than one scholarship from the college at any one time.

Gifts by the College
ENTRANCE SCHOLARSHIPS — FULL TUITION

60 FULL-TUITION SCHOLARSHIPS TO STUDENTS ENTERING UNIVERSITY I.
THESE VALUABLE SCHOLARSHIPS ARE RENEWABLE FOR TWO YEARS.
40 FULL-TUITION SCHOLARSHIPS TO BE AWARDED ON PRIOR
ACADEMIC ACHIEVEMENT. (APPLY DIRECTOR OF AWARDS, LOYOLA COLLEGE)
10 FULL-TUITION SCHOLARSHIPS TO BE AWARDED BY YOUR
MONTREAL CEGEP. (SEE THE GUIDANCE COUNSELLOR AT YOUR CEGEP).
10 FULL-TUITION SCHOLARSHIPS TO BE AWARDED TO THE
WINNERS OF THE 'MATCH OF MINDS'.

THE BARTLETT MEMORIAL SCHOLARSHIP VALUE \$100.00
THE BARTLETT DOHERTY MEMORIAL SCHOLARSHIP
VALUE \$100.00
THE GASSON MEMORIAL SCHOLARSHIP VALUE \$100.00
THE JONES MEMORIAL SCHOLARSHIP VALUE \$100.00
THE MCCARTHY MEMORIAL SCHOLARSHIP VALUE \$100.00
THE MCMAHON MEMORIAL SCHOLARSHIP VALUE \$100.00
THE O'BRYAN MEMORIAL SCHOLARSHIP VALUE \$100.00
THE O'DOWD MEMORIAL SCHOLARSHIP VALUE \$100.00

THE PRESIDENT'S SCHOLARSHIPS — Three VALUE \$100.00
THE J. S. O'NEIL SCHOLARSHIP VALUE \$100.00
Donated by J. S. O'Neil

Annual Gift Scholarships

THE CHARLES BROWN MEMORIAL SCHOLARSHIP VALUE \$100.00
THE MRS. CHARLES BROWN MEMORIAL SCHOLARSHIPS —
2 VALUE \$100.00
THE GUTELIUS MEMORIAL SCHOLARSHIP VALUE \$100.00
THE KNIGHTS OF COLUMBUS COUNCIL 284 SCHOLARSHIP
VALUE \$100.00
THE STATE COUNCIL, KNIGHTS OF COLUMBUS PROVINCE
OF QUEBEC SCHOLARSHIP VALUE \$100.00

Endowed Scholarships

THE LILLY F. BARRY SCHOLARSHIPS. Three. VALUE \$100.00
THE URSULA CARLING SCHOLARSHIPS. Two endowments from the
estate of the late Mrs. Ursula Carling. VALUE \$100.00
THE CLORAN MEMORIAL SCHOLARSHIP VALUE \$100.00
THE COLLINS-HEFFERNAN MEMORIAL SCHOLARSHIP. From the
Mary Ellen Heffernan Bursary and the Nelson Collins Scholarship. VALUE
\$100.00
THE CUDDY-STANFORD MEMORIAL SCHOLARSHIP. From the John M. Cuddy
Scholarship and the Stanford Memorial Scholarship. VALUE \$100.00
THE DOWLING-MORIARTY SCHOLARSHIP. From the estate of the late Francis J.
Dowling and of the late Mrs. E. Stowell, widow of the late John Moriarty. VALUE
\$100.00
THE MRS. F. J. DUCKETT SCHOLARSHIP. From the estate of the late Mrs. F. J.
Duckett. VALUE \$100.00
THE FRIENDS OF LOYOLA SCHOLARSHIP. From funds endowed from the James
Corcoran Scholarship, the Rev. William Doherty Scholarship, the Gregory O'Bryan
Scholarship, and from funds given by the Student's Penny Scholarship. VALUE \$100.00
THE ARTHUR HALLEY MEMORIAL SCHOLARSHIP. Endowment from F. Halley, St.
John's Newfoundland in memory of his son Arthur, graduate of the Pre-Medical Class of
1946, Magna Cum Laude, who died on the eve of convocation. VALUE \$100.00
THE MR. AND MRS. THOMAS WILLIAM KAVANAUGH MEMORIAL
SCHOLARSHIP. Donated by the Rev. Thomas W. Kavanaugh. VALUE \$100.00
THE LOYOLA SODALITY SCHOLARSHIP. Funds from the Sodality Scholarship and
from the Loyola Scholarship Club Association Bursary. VALUE \$100.00
THE MAHONEY-MURPHY MEMORIAL SCHOLARSHIP. From the Mother Ellen
Memorial Scholarship and the John Walsh Murphy Memorial Scholarship. VALUE
\$100.00
THE KENNETH J. McARDLE MEMORIAL SCHOLARSHIP. Donated by Mrs. Mary
McArdle as a tribute to the memory of her late husband Kenneth J. McArdle. VALUE
\$100.00
THE ST. IGNATIUS PARISH SCHOLARSHIP. Money collected and presented to the St.
Ignatius Men's Association and originally known as the Coronation Arts courses
Scholarship. VALUE \$100.00
THE SHARP-O'REILLY SCHOLARSHIP. Funds from the Alice M. Sharp Scholarship,
and from the Winnifred O'Reilly Memorial Bursary. VALUE \$100.00
THE JAMES WEBER MEMORIAL SCHOLARSHIP. Awarded in memory of a member of
the Class of 1970.

THE BANK OF MONTREAL SCHOLARSHIP. It is awarded to a student in
Loyola's Department of Communication Arts Radio Course. It is awarded to
the student who is judged to be the best overall participant in the CJAD
News Research Team Project. VALUE \$1,000.

THE JUDITH ROMAN MEMORIAL SCHOLARSHIP FUND: A limited
number of scholarships available to qualified students through the generosity
of Mr. and Mrs. John Z. Roman.

ROYAL CANADIAN ENGINEERS MEMORIAL SCHOLARSHIPS:
Scholarships of up to \$500.00 each are offered annually to students, both

male and female, who are attending any educational course of study or practical training course beyond secondary school level. Scholarships are awarded on the basis of merit and need to the most suitable candidates from among those who apply.

To be eligible, a student must be the child or grandchild of a person who served in any rank in any of the following components of the Canadian Armed Forces: a) A Royal Canadian Engineer component of the Canadian Army during World War I, World War II, or under the United Nations in Korea. b) The Royal Canadian Engineers in the Canadian Army Regular or Permanent Force or Militia or non-Permanent Active Militia, for not less than three continuous years. c) The Military Engineers Branch of the unified Canadian Armed Forces for not less than three continuous years after the First day of February 1966.

Apply:
Deputy Chief of Construction
Military Engineering Advisor
DCC-NEA Building #105
Canadian Forces Headquarters
Victoria Island, Ottawa.

COMMONWEALTH SCHOLARSHIPS: Under a plan worked out at the Commonwealth Education Conference at Oxford in 1959, responsibility is shared between the Canadian Commonwealth Scholarship and Fellowship Committee and the External Aid Office to enable an increased number of students to share in the wide range of educational resources available through the Commonwealth. An under-graduate award is made of the period required to enable the student to obtain his degree.

For information, consult: The Canadian Commonwealth Scholarship and Fellowship Committee, c/o Association of Universities and Colleges of Canada, or: The Director General, External Aid Office. Both located at: 151 Slater St., Ottawa 4, Ontario.

IMPERIAL OIL HIGHER EDUCATION AWARDS: Imperial Oil Limited offers annually free tuition and other compulsory fees to all children or wards of employees and annuitants who proceed to higher education courses. The courses may be taken at any Canadian university or other approved institution of higher learning.

Each award is tenable until the attainment of a first degree or for a maximum of four years. To be eligible a student must attain an average mark of 70% or higher in the appropriate secondary school examinations in the subjects required for admittance to the approved institution, or must have attained an average of 70% or more in a college year upon which application is based. Further information and application forms may be obtained from The Secretary, Committee on Higher Education, Imperial Oil Limited, 111 St. Clair Avenue West, Toronto 7, Ontario.

Loans

GOVERNMENT LOAN PLANS: In all the Canadian Provinces a basic qualification for financial aid is that the applicant be a Canadian citizen or landed immigrant with one year's residence and domicile in the province to which he is applying.

The Province of Quebec has an extensive program of Student Loans and Bursaries available to students. Apply to: Director, Financial Aid, Loyola College, Room A-126, Montreal, Quebec.

Ontario: Department of Colleges and Universities, Mowat Block, Queen's Park, Toronto, Ontario.

New Brunswick: Department of Youth and Welfare, Fredericton, New Brunswick.

For the provinces of Newfoundland, Prince Edward Island, Nova Scotia, Saskatchewan, Alberta and British Columbia, write to the Provincial Department of Education.

UNITED STATES STUDENTS: Maine and Oregon — Apply through the United Student Aid Fund, Form 1070, available at your bank.

Students from other states — Apply to the Higher Education Assistance Corporation. Application forms available at your bank.

Due to the tight money situation, it is essential that you apply to the bank where your parents have an account.

NOTE: APPLICATIONS FOR GOVERNMENT AID SHOULD BE MADE AS SOON AS POSSIBLE. DO NOT WAIT FOR REGISTRATION.

LOAN FUNDS: Through the generosity of the Birks Family Foundation, the B'nai B'rith Hillel Foundation and the National Council of Jewish Women, a certain amount of money has been placed with Loyola to help students in an emergency situation. Available, interest free, to all students who demonstrate need and responsibility. Apply to Director, Financial Aid.

LOYOLA ALUMNI STUDENT LOAN FUND: The Loan Fund exists to aid students are in financial difficulties. Because of limited resources, the trustees of the loan fund will consider loans to students who: 1) have been successful in their set of final examinations at Loyola; 2) are prepared to repay the loan by the end of the summer.

Applications should be made in writing to: Loyola Alumni Student Loan Fund, Loyola of Montreal, 7141 Sherbrooke St. W., Montreal 262, Quebec.

APPLICATIONS MUST BE MADE BEFORE DECEMBER FIRST.

Grants

PHYSICALLY HANDICAPPED: Students in any faculty who are Canadian citizens and have been resident and domiciled in Quebec for two years, may apply for an outright grant if they have suffered from poliomyelitis, tuberculosis, certain forms of cardiac trouble, or some other physical disability. Apply Director, Financial Aid.

CHILDREN OF WAR DEAD (EDUCATION ASSISTANCE) ACT: Under this Act fees up to \$800.00 and monthly allowances are provided for children of Canadian war veterans whose death was attributed to military service in World War I, World War II, or the Korean War.

Apply to the Superintendent of Welfare Services at the nearest DVA District Office.

Bursaries

A bursary is a sum of money given to a student to assist him financially in the continuation of his studies.

Due to the greatly increased demand for financial aid, all students must apply first to their own province and/or state and accept maximum loan and bursary aid from these sources. Thus, Loyola funds cannot normally be used

to compensate for a student's failure to apply for and accept the maximum Government assistance available to him. If a student needs more than this maximum Government assistance, a bursary may be granted.

The basic principle in awarding financial aid is that the primary obligation to pay for an education rests with the students and their parents. This means that a student is expected to have savings from his summer employment, and that parents must contribute according to their ability.

The Financial Aid Office exists solely to assist students and to help them find financial aid should they need it.

A bursary will take the form of a credit to the student's tuition account. Ordinarily, bursaries will not be awarded to students with less than a 50% overall average.

Applications for bursaries should be made as early as possible. Apply to the Director, Financial Aid, Loyola of Montreal.

THE IBM THOMAS J. WATSON MEMORIAL BURSARIES: Donated by the IBM Company as part of the IBM Thomas J. Watson Memorial Bursary Program. Awarded annually to needy undergraduates in any year and in any faculty who are in good academic standing. Number: Two. Value: \$500.00 each. Apply as soon as possible to the Director, Financial Aid.

THE LOYOLA AFRICAN BURSARIES: Awarded to qualified and deserving students from any country in Africa who intend to return to aid their homeland's development after graduation. Type "A". Value: Varies but includes full tuition, registration fee, room and board etc. Type "B". Value: Varies, but includes full tuition, registration fee and books.

THE LOYOLA BURSARY FOR THE BLIND: Awarded to a blind student who is qualified to follow regular courses. Number: One. Value: Full tuition for one year. Renewable.

TOUCHE ROSS & CO. BURSARY: Awarded annually to a student who is completing his third year and will be entering his final year, majoring in Accountancy in the Faculty of Commerce, and who intends to pursue the qualification of Chartered Accountant. Number: One. Value: \$200.00

THE BIRKS FAMILY FOUNDATION BURSARIES: A limited number of bursaries are available under this plan. The student's financial need and academic standing will be considered in the granting of these bursaries. Apply to Director, Financial Aid.

B'NAI B'RITH HILLEL FOUNDATION: A limited number of bursaries are available. Amount of each bursary granted from this fund may vary according to the need of any deserving student in any year or any faculty. Apply to Director, Financial Aid.

NATIONAL COUNCIL OF JEWISH WOMEN OF CANADA, MONTREAL SECTION, BURSARIES: A limited number of bursaries are awarded by the Council upon the recommendation of the Financial Aid Director. Academic standing and financial need are considered in making the award. Although there is no legal obligation, the Council hopes that the holder will, if possible, return the money at some future time so that other students may be helped. Apply to Director, Financial Aid.

MR. AND MRS. MEIER SEGALS BURSARIES: A number of bursaries are

available through their generosity to needy students with good academic standing.

CANADIAN-ITALIAN BUSINESS & PROFESSIONAL MENS ASSOCIATION: Bursaries are awarded to students of Italian origin or descent by the Association. Apply to Mr. Dante Panni, President, Trust Fund Committee. Forms available through the Financial Aid Office.

Awards and Prizes

THE GOVERNOR-GENERAL'S MEDAL: Presented by His Excellency the Governor-General of Canada to the outstanding student graduating with the highest overall average in Arts.

THE LOYOLA SCIENCE MEDAL: Presented by Loyola to the graduating student with the highest overall average in Science.

THE LOYOLA COMMERCE MEDAL: Presented by Loyola to the graduating student with the highest overall average in Commerce.

THE LOYOLA ENGINEERING MEDAL: Presented by Loyola to the graduating student with the highest overall average in Engineering.

THE LOYOLA C.O.T.C. MEDAL: Presented to the most representative student among the graduates.

THE WILLIAM H. ATHERTON PRIZE FOR HISTORY: Awarded to a student for outstanding research in Canadian History.

THE BRODRICK AWARD: Established in honour of Dr. Robert Brodrick, Arts '43, and awarded to the graduating student athlete who has distinguished himself in academic and extracurricular endeavours during his years at Loyola.

THE DR. J. LECLERC PRIZE FOR CHEMISTRY: Awarded annually to the student with the highest average for Chemistry subjects in University I.

THE CHEMCELL PRIZE FOR CHEMISTRY: Awarded to the student with the highest overall average in Chemistry subjects.

THE CHEMCELL PRIZE FOR ENGLISH: Awarded to the graduating student in Arts, taking a Major or an Honours in English, with the highest overall average in English subjects.

THE PIERRE DESMARAIS PRIZE: Awarded to the student who has distinguished himself during his last year, by his contribution to non-academic activities.

THE ECONOMICS PRIZE: Granted by Loyola to the graduating student in Arts or Commerce, taking a Major or an Honours in Economics, with the highest overall average in Economics subjects.

THE EVENING DIVISION MEDAL: Granted by Loyola to the student with the highest overall average in the Evening Division.

THE LOYOLA EVENING STUDENTS ASSOCIATION MEDAL: Awarded to the student with the highest overall average in the Faculty of Science.

THE LOYOLA EVENING STUDENTS ASSOCIATION MEDAL: Awarded to the student with the highest overall average in the Faculty of Commerce.

THE LOYOLA EVENING STUDENTS ASSOCIATION MEDAL: Awarded to the student with the highest overall average in the Faculty of Arts.

THE FRENCH LANGUAGE PRIZE: Donated by the Government of France and awarded to the graduating student who has shown the most progress in French Language courses.

THE GERMAN LANGUAGE PRIZE: Donated by the Consulate General of the Federal Republic of Germany to the student who has shown the greatest progress in the German language course offered at Loyola.

THE KNIGHTS OF COLUMBUS PRIZE FOR CANADIAN HISTORY: Donated by the Knights of Columbus of the Province of Quebec to the student who has obtained the highest mark in Canadian History during the current academic year.

THE PHILOSOPHY GOLD MEDAL: Presented by Loyola to the outstanding graduate in philosophy and awarded on the recommendation of the Philosophy Department.

THE PHYSICS PRIZE: Granted by Loyola to the graduating student in Physics with the highest overall average in Physics subjects.

THE SOCIETY OF CHEMICAL INDUSTRY, CANADIAN SECTION, MERIT AWARD, CHEMISTRY: Presented to the highest ranking (over 75%) student in fourth year, majoring in Chemistry, Chemistry-Physics, or Chemistry-Mathematics, who has completed the course in the normal number of years.

THE DR. JACQUES SMITH MEMORIAL PRIZE: Donated by Dr. Kurt Ekler in memory of Dr. Jacques Smith, a Loyola graduate who died suddenly in 1960 at the age of thirty-six, and awarded to the graduating student with the highest overall aggregate standing in Pre-Medical Studies.

THEOLOGY MEDAL: Presented by the Most Reverend Leonard J. Crowley and awarded to the graduating student who has been the most creative and productive in the field of Theology.

THE MME. ALFRED THIBAUDEAU PRIZE FOR POLITICAL SCIENCE: Donated by Miss Madeleine Thibaudeau in memory of her mother and awarded to the graduating student with the second highest average in the field of Political Science.

THE RENEE VAUTELET PRIZE FOR POLITICAL SCIENCE: Awarded to the graduating student with the highest average in the field of Political Science.

THE MICHAEL WATSON PRIZE: Donated by Loyola to honour the memory of Michael Watson, an outstanding, capable and popular member of the class of 1967, who met his death in a construction accident at the end of his third year. Awarded to the graduating student who has shown academic superiority in the study of Biology.

THE MONTREAL ECONOMIC ASSOCIATION PRIZE: Donated by the Montreal Economic Association to the student with the highest overall average in his economic courses in his penultimate year.

THE CHEMICAL INSTITUTE OF CANADA: Donated by the Chemical Institute of Canada to the student taking an Honours in Chemistry with the highest average in his penultimate year.

Chaplaincy

LOYOLA CAMPUS MINISTRY,
3500 Belmore Ave., Montreal 262, Que.

The Loyola Campus Ministry is made up of a team of chaplains whose purpose is to help the members of the Loyola Community deepen their religious awareness and at the same time to provide possible ways of expressing and celebrating it. They presume that every individual is capable of deepening his understanding of the mystery of life within him and by doing so, to identify both himself and his relation to the world around him more clearly.

A team of full-time chaplains is made up of Roman Catholic priests and religious sisters. These are helped by part-time associates to the Campus Ministry from among the Protestant and Jewish clergy.

The activity of the Campus Ministry is centered in Belmore House, a place of welcome for those on campus. Many students come there during the day to meet others, drink coffee, study, listen to music, play guitar, play chess, or just to rap. A number of activities and programmes are organized through the house which during the course of the academic year involve hundreds of individuals. In addition to daily liturgy on the Campus, and a special Sunday liturgy in the College Chapel, students may become involved in Share-Weekends, working with the blind or those in rehabilitation, the Big Brother movement, coffee houses, lectures and discussions on contemporary subjects, a Christmas drive to help poor families in Montreal, and a number of social and athletic activities such as softball, hockey, basketball, and even ski trips.

Where it is possible (both because of the nature of the activity and the time available) the chaplains try to work with either the individuals or groups to prepare for an activity by clarifying motives and discussing expectations. Then once the activity is finished, an evaluation is encouraged to reflect on what has happened and to draw personal lessons from the experience. Hopefully this process will lead to a deeper awareness of personal and religious identity in the light of present experience. For further information call the Campus Ministry at 484-4095.

Physical Education and Athletics

E. Enos

Aikido. Archery. Badminton, Basketball. Billiards. Bodybuilding. Boxing. Broomball. Cheerleading. Curling, Fencing, Fitness Classes. Football. Golf. Hockey. Ice skating. Jogging. Judo. Karate. Majorettes. Modern Dance. Sky diving. Soccer. Tai-chi-chuan. Table Tennis. Tennis. Track and Field. Volleyball. Water Polo. Weight-lifting. Yoga. These activities encompassing all popular and individual sports for men and women are offered at Loyola under the supervision of professionally-trained instructors.

Designed to offer a complete and diversified programme to meet the varied interests of today's students, the programme has been cited as one of the outstanding contemporary models in the country. The aim is to provide an opportunity for all students to participate, and not just the dextrous few who play varsity sports.

The co-educational clubs open to all male and female students provide recreational physical activity in a relaxed social setting. The idea behind these clubs is to combine sport education with fun in a no-experience-necessary organization.

The men's and women's intramural programmes are designed to accommodate the entire student body, and to provide keen competition and activity in both team and individual sports.

Because varsity teams are limited in number, the junior varsity level has been set up to allow greater numbers of students to participate. It operates as an extension of men's intramurals, and acts as a training ground for the varsity level.

The traditionally strong Varsity programme is primarily for students with playing experience. Loyola Varsity Squads have an excellent reputation for successful competition against other top ranked Canadian and regional United States university teams. The Women's Varsity Program offers women students the opportunity of competing at the intercollegiate level within the Quebec Universities Athletic Association.

The south campus is the focal point of all the Physical Education action, and includes full-length playing fields, outdoor activities, and a new \$3,000,000 physical education centre. The centre contains modern facilities for men and women, a spacious gymnasium, and an ice arena. Other areas include a training and rehabilitation centre equipped with ultrasonic and hydrotherapeutic equipment; an activities room; administration offices; numerous dressing rooms; a press box; snack bar; table tennis; billiards facilities; and a combatives room for individual contact sports.

Details on all activities are included in the Department of Physical Education and Athletics Guide which is issued at registration. For further information call 489-7284.

Music Department

The Music Department, which has grown steadily over the last two years, provides the College community with many opportunities for personal musical development.

E. Haughey

Areas are available to individual students for instrumental practise and use of the listening facilities provided by the considerable record library.

Individual instrumental lessons may be arranged by consulting the Director of Music. Increased emphasis has been laid on this aspect of personal artistic development and understanding.

The larger ensembles available are the Choral Society, the Loyola Orchestra and the Loyola Concert Band. Entrance to all three activities is by audition. Smaller ensembles, e.g., Recorder groups, vocal ensembles, are provided on demand.

The Loyola Orchestra, a unique amateur group in the city, has attained a reputation for musicianship and high standards of performance, and has accompanied solo artists of international standing in concert performances. The Choral Society, a 50-voice ensemble, shares with the orchestra a standard of achievement in the presentation of major choral works, and the two groups provide the basis of Loyola's contribution to music-making in Montreal.

The Department also provides examples of the best in professional performances of music in their invited artists programmes during the year. For further information call 482-0320, Ext. 249.

Canada Manpower Centre

E. Allen

The Canada Manpower Centre at Loyola stresses not only job placement, but effective job placement. The CMC provides the facilities for employers to find workers and workers to find jobs. Students are advised where and how they may obtain suitable employment in their field of studies, or how they may improve their chances of getting and holding better jobs.

Services are available to day and evening students interested in finding permanent positions, summer and part-time jobs. Seniors may have interviews arranged on campus with representatives of leading industries, professions and government departments. Appointments are arranged for evening students unable to come during the day.

The CMC Career Library and Reading Room has a supply of vocational and graduate program materials. Printed information is available free of charge.

The Canada Manpower Centre is located on the top floor of the Centennial Building, 6935 Sherbrooke St. W., 489-3885.

Lacolle Centre

The Lacolle Centre for Educational Innovation is an off-campus facility located 40 minutes from Loyola near Lacolle, Quebec. It provides a place and other resources so that people can explore new avenues of learning and being together, enhancing their overall educational experiences at Loyola.

While the Centre offers some programmes of its own, it exists to encourage the development of programmes by any interested class, group, or individual. A programme consultant is available to give assistance in planning programmes so that people have the best opportunity to achieve their objectives.

By having the Centre off-campus and out of the context of everyday life at Loyola, it is possible for people to de-emphasize their official roles, and have contact with other segments of the community on a more personal basis.

The Centre can be used as a supplement to regular classes, as a place where people who regularly work together can build more productive relationships, and as an opportunity for people to explore mutual interests with others. The Centre is limited only by the imagination and resourcefulness of the Loyola Community.

Proposals for the use of the Centre should be made well in advance. The Coordinator or Secretary may be contacted through the Lacolle office — Room AD-104-(482-0320, loc. 344).

Campus Centre

The New Campus Centre is scheduled for completion for the 1973 academic year.

The 23,000 square foot, three-storied, air-conditioned structure is designed to meet the social and recreational interests of all students, with many areas designed with multi-purpose functions in mind.

The ground floor acts as a recreation area complete with equipment for billiards, ping pong, and other indoor activities. It also contains a work area where students may work on stage props, Carnival projects, or other special projects.

The main floor consists of a snack bar, conference rooms, the administrative offices of the Centre, and an intimate lounge decorated pub-style that is designed to serve as a bar on special occasions.

The third floor contains a large main lounge that serves as a gathering ground for students, an exhibition area, and a small intimate lounge. The area is complete with closed circuit TV, a headphone system for music, carpets, comfortable easy chairs, and a relaxed atmosphere.

The Centre is designed to be both a gathering place, and a get-away-from-it-all place. Socialize. Join in the activities. Relax in comfort. Grab some shut-eye between classes. It's your Centre. Governing of the Campus Centre will be handled by a Board of Directors, composed of 11 members, the majority of whom will be students. This board will establish policy for the Centre. In addition, there will be a Board of Management which will handle the administration and daily operation of the Centre.

Food Services

The Hingston Hall Dining-Room is open to all students, staff and faculty. 'A la carte' services and special hot meals are provided daily except Saturdays and Sundays. The seating capacity is 250.

A. Woodcock

A new Campus Centre will be opened during the summer of 1973. It is located to the north of Vanier Library. A variety of warm food, snacks and beverages will be served at reasonable prices. The total seating capacity in the restaurant and pub will be about 275.

Guadagni Lounge provides facilities for students who bring their lunch. Vending machines supply hot and cold drinks, pastries, milk and ice-cream. Seating capacity is 100.

Day Care Centre

What has been a bone of contention in many business communities has been established as a regular service at Loyola. All members of the Loyola community are invited to take advantage of the convenience offered by the Day Care Centre.

The Centre is well-equipped, both in terms of staff and materials. Full and part time care is provided by a qualified staff and student volunteers. The programme offers a variety of activities suited to the pre-school levels with a balance between structured and unstructured, individual and group, quiet and vigorous. In warm weather, the children can play outside either in the play-yard behind the school or in the city playground across the street.

Located on the campus at 2499 West Broadway, the Day Care Centre operates year-round during the week from 8:30 a.m. to 5:00 p.m. It is open to pre-school children ages 2-1/2 to 5.

The fee for full-time care is \$70 per month. (Half-time \$35).

Overseas Students

Finances:

It is most important for a student to have sufficient financial resources to cover his total expenses for at least one year of study. As you are no doubt aware, immigration regulations normally do not permit student visa holders to accept any form of employment during the academic year. A guideline of expenses which a student may expect to incur, in addition to his tuition fees, follows: (It should be noted that these figures can be considered minimal).

Books and Supplies	\$125.00
Lodging	700.00
Food	500.00
Insurance	50.00
Clothing	175.00
Miscellaneous	250.00
Transportation	100.00
Plus Tuition Fees	
Cost for one year (approximately)	\$2000.00

These costs have been calculated on the value of Canadian currency and cover only the academic year.

Overseas students are expected to present evidence to immigration authorities that they have adequate funds for their studies in Canada.

LOYOLA OR THE CANADIAN GOVERNMENT DOES NOT GIVE FINANCIAL ASSISTANCE TO OVERSEAS STUDENTS

English

Requirements:

All classes at Loyola are conducted in English. Students are expected to have sufficient facility in the use and understanding of the English language to be able to handle his or her programme. No exceptions can be made for students whose fluency is poor; this would probably entail "slowing down" the normal progress of the class. Please be aware of this before making a commitment with us.

Ombudsman

The position of Loyola Ombudsman has been created upon the recommendation of the LSA.

This post provides students with an effective mediator who is able to receive and resolve any grievances from students concerning academic and administrative procedures, practices and decisions. Resolving can take the form of informal contact and conciliation, or formal recommendations to the appropriate college officers, committees or boards.

Any problems that students may encounter which could affect their studies can become the problems of the Ombudsman. He attempts to deal with the problems himself as often as possible, and will refer the student to other offices only on rare occasions.

The Ombudsman is independent of outside direction and the usual structures, but is accountable to the President of the College.

All students who may need the assistance of the Ombudsman are encouraged to make full use of this Loyola service. The office of the Ombudsman is located in Room A-105 of the Administration Building.

College Rules and Regulations

An environment that is conducive to learning can only be maintained through reasonable campus rules and regulations. At Loyola, these rules are not intended merely to restrict. Rather, they encourage each individual student to be self-reliant and responsible. They are designed to guarantee that each student has the right to study protected from those who may be motivated otherwise. Registration requires acceptance of these rules in order to ensure that the rights of all individuals be respected.

Loyola rules are not dictatorially handed down by the administration. Student government is involved in all policy-making that concerns the rights of the students. The rules are subject to change by an act of the college senate, which includes student representation.

The policy states that (1) The rules are the two-fold responsibility of the college to the entire student body, and to the student as an individual. (2) Any individual charged with a breach of policy is assured a fair and just

hearing. He has the right to hear explicitly stated charges, an open hearing, and confrontation of witnesses. (3) The burden is on the accuser to prove the accused committed the charges, not on the accused to prove innocence.

Students are not permitted to possess alcoholic beverages on campus. Exceptions for group organized events can be obtained from the Events Co-ordinator. Applications must be made one week prior to the event. Residence halls determine their own policies regarding the use of alcohol except for public events.

The use and/or possession of hallucinogenic drugs and all drugs specifically prohibited by law are not permitted on the campus. The penalty for violation may be dismissal.

Each student must assume responsibility for his own actions, and conduct himself in a lawful manner. The rules also require that constitutional authority be respected, and that both private and public property be protected. Any student behaving contrary to these policies is subject to penalties according to the gravity of the offence.

Legal aid Office:

M. Danis

Legal services are offered to all students who may require assistance on matters relating to their legal rights. A student who is charged with a criminal offence may have the legal advisor appear for him in criminal or municipal court. This service may also extend to civil proceedings in which a student is involved as either plaintiff or defendant. All services are free and confidential. The legal aid office will also defray the costs of civil or criminal proceedings for students without the necessary financial means.

Student Court:

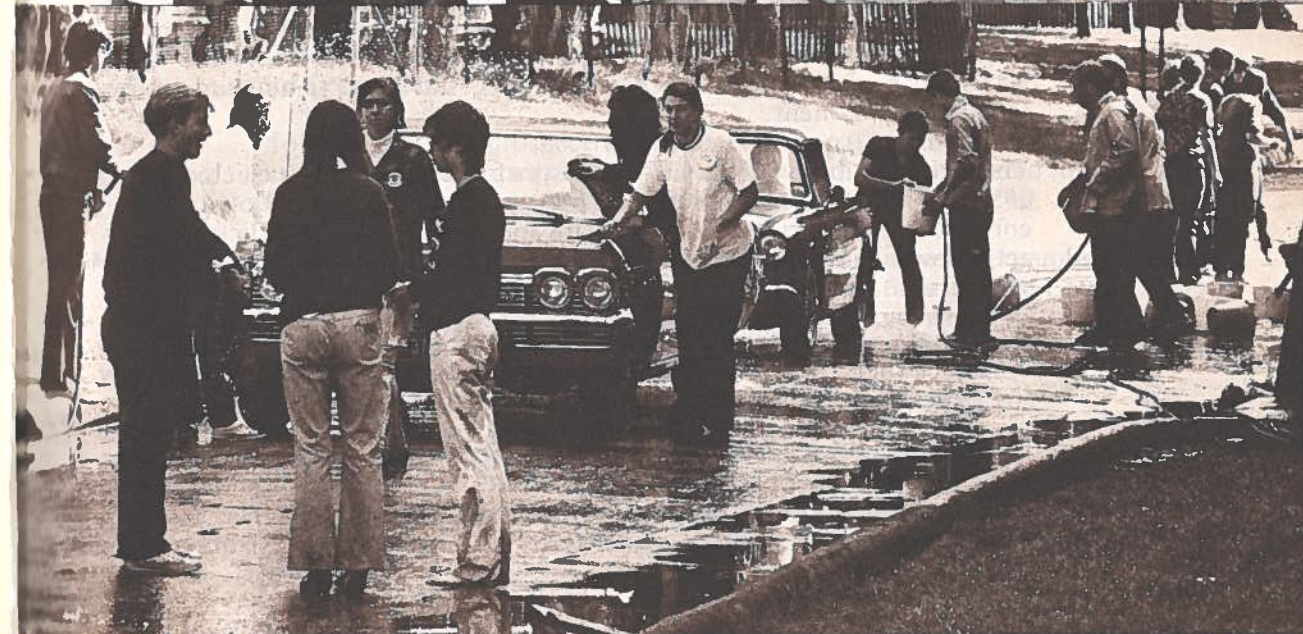
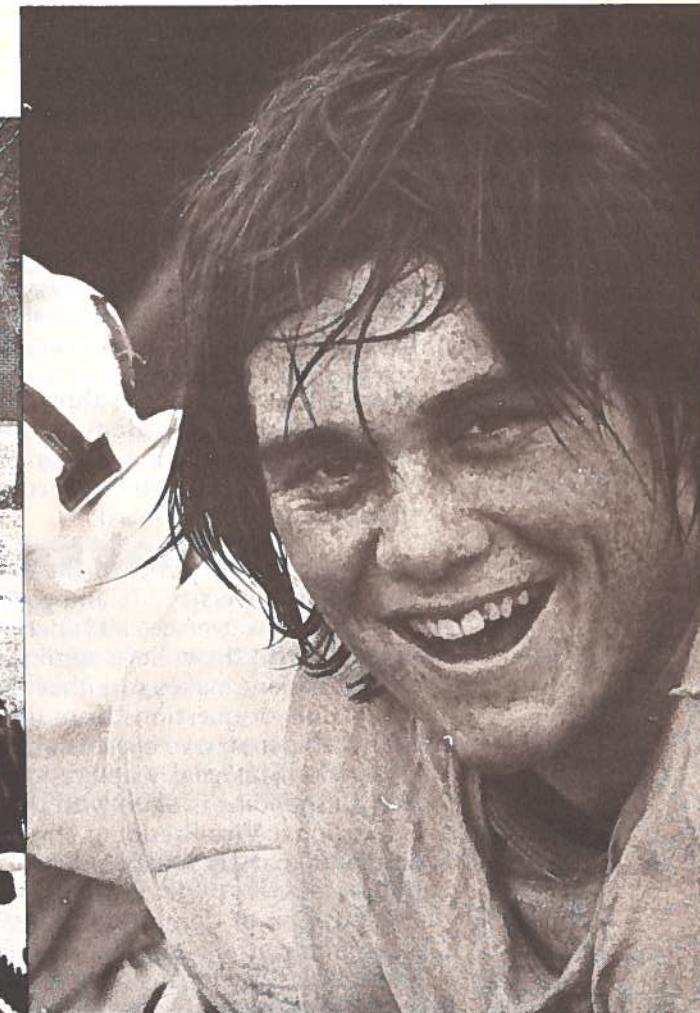
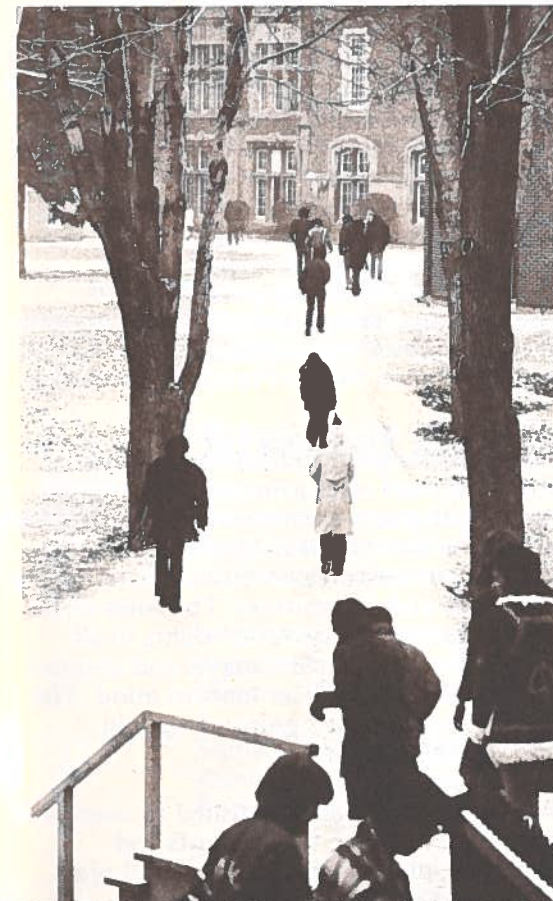
M. Danis

A student Judiciary Board is set up to receive complaints of any student discipline that is non-academic in nature. The Board consists of seven members appointed by the Student Senate. Three members chosen by the Board clarify complaints and inform each plaintiff and defendant of their rights. They may then decide to convene a hearing under the Loyola Code in front of one of the Student Courts.

A Student Court hears each case until judgement has been reached. Each Student Court consists of five students selected at random from a pool of 15 students appointed by the Student Senate.

The Court of Final Appeal can sustain the decision of the lower court, reduce the sentence, or decide in favour of the appellant. This court consists of two faculty members and three students.

Complaint forms may be obtained from the Judicial Office in Hingston Hall.



Student Government

Student Government

The Loyola Students Association exists to serve the needs of all day students at Loyola. Since the LSA is aware that these needs are not exclusively social and cultural, it also concentrates on instituting academic reforms when necessary. Some of these have included the initiation of grading reform, course evaluation, and increased student representation on the Senate.

The LSA is financed by a Student Activity Fee. All students are automatically members of the LSA, and all students are encouraged not only to be automatic members, but to be active members. Loyola prides itself on being small and flexible enough to be able to listen to what students have to say, and to be able to do something about it. Reforms can take place only when students have the ideas and the initiative to make them happen. The LSA provides the tool that can effect change.

Executive

The LSA is composed of three elements: The Executive, The Board of Directors (Legislative Body), and the Senate (Judicial Body). Each February, all students become involved in electing a President, and his Internal Vice-President. The other executives are chosen by the President, subject to the approval of the Board.

Although each member of the executive is assigned to handle different aspects of university life and government, their roles generally intermingle. The President oversees all functions, and also acts as spokesman for the students with the college administration and the public. The Internal Vice-President makes sure that the LSA operates efficiently, and handles any complaints or questions from the societies and committees. The roles of the Vice-Presidents have been established to guarantee students' rights in all areas. The Financial Vice-President handles committee budgets and ensures that all spending is done with the best interests of all students in mind. The Educational Vice-President ensures that the student's point of view in academic matters is expressed to the administration.

Board of Directors

The position of Communications Vice-President was established to overcome a communications gap that was developing between the students and government. By means of special bulletins, publications, posters and press releases, all students are kept well-informed of the activities of their government. This job also includes the co-ordination of special student information meetings, and acting as a liaison with Loyola Radio and Loyola News. A Special Services Vice-President was established to aid students in seeking employment.

Student Senate

The legislative body of the LSA consists of sixteen members elected annually as voting members of the Board, in proportion to the number of students enrolled in each faculty. They regulate and co-ordinate the policies and activities of the Association in keeping with the best interests of the students.

They check and review legislation proposed by the executive, and may also introduce their own proposals. They establish special committees to review any issues and problems that may arise during the year.

The judicial body of the LSA consists of eight members elected by the Board from a slate prepared by the outgoing Senate. It has jurisdiction over matters affecting student discipline and constitutional interpretation. The Senate acts as guarantor of students' rights as defined by the Bill of Rights of the LSA.

Special Committees

The Freshman Reception Committee works during the first weeks of the year to welcome newcomers to Loyola, and to acquaint them with life at the College.

The Carnival Committee is responsible for planning one of the most exciting entertainment events of the year. Carnival is a hectic week, full of exciting events and activities, complete with top-name entertainers.

The Graduation Committee arranges for all activities of graduating senior students. They handle all the details necessary for Convocation, and for the traditional Graduation Ball.

The Course Evaluation Committee handles the important job of organizing and co-ordinating the annual course evaluation. Twice during the year, students are asked to complete a questionnaire which rates the various aspects of a course on a fine point scale system. Over 600 courses and sections are evaluated each year, resulting in about 16,000 evaluations. The results are printed and distributed to students free of charge. In addition to acting as a helpful aid to students at registration, the guide also acts as an effective instrument of feedback for professors and departments, and as a valuable tool for faculty review boards.

Student Organizations

Associations

The over forty organizations on campus cover most interest areas. They range in nature and scope from dramatic, musical and recreational to ethnic, academic, professional, and political.

Some may act as interesting supplements to areas covered in classes. These department societies include Communication Arts, Economics, English, History, Modern Languages, and Sociology.

Some exist to further occupational interests: The Loyola Arts Students Association, The Commerce and Science Students Associations, and the Engineering Undergraduate Association.

Others are designed to appeal to a range of interests and ideals: the African, Camera, Investment, Drama, and Debating Clubs, the Society for the Advancement of Management, Women's Liberation, Photo Loyola, the Liberal Association, the International Association of Students of Economics and Commerce.

"Join Days" offer prospective members information about all the LSA Committees and organizations. The offices of most are situated in the Centennial Building at 6931 Sherbrooke St. W., Tel: 482-9280.

Publications

The Board of Publications, consisting of five student voting members, acts as a Supervisory board for all campus publications. These include Loyola News, the official student newspaper; The Review, the student yearbook; the Student Directory; Radio Loyola; Photo Loyola; official L.S.A. bulletins and all other student-oriented publicity.

Fraternities and Sororities

There are 4 fraternities on campus: Tau Kappa Epsilon, Theta Sigma, Phi Kappa Theta and Phi Lambda Rho.

Musical Theatre

"ANYTHING GOES" WELL — LOYOLA HAPPENING
LOYOLA HAS A HIT, LOYOLA'S ENTRY SWEEPS QUEBEC DRAMA
FESTIVAL— THE MONTREAL STAR

Thé-Arts

These are just a few of the headlines which greeted Anything Goes and Bye Bye Birdie, The-Arts' two productions last year. A student run organization,

The Actors' Company

we attempt to acquaint the student with the world of musical theatre. Student involvement is total — from production through performance; carpenters, artists, actors — a variety of talents and interests are served. Since you learn by doing, you can even pick up an English credit for your work in our shows. Give us a call care of student services ext. 346.

The Actors' Company is a theatre group (with a student executive) producing mainly serious plays under the direction of drama professors. Along with production experience, there are acting workshops given in scheduled classes, and opportunity is provided to study various aspects of the theatre as a craft.

Financial Needs of Loyola

The buildings and educational equipment of Loyola College are valued in the vicinity of thirty million dollars.

The expense of providing all the educational needs of Loyola cannot be covered by government grants, tuition fees and operational revenues alone. As with all universities, Loyola depends on the continuing generosity of foundations, corporations, parents, graduates and friends to provide the additional funds required for construction and special operating projects, scholarships and bursaries.

Alumni Association

The objectives of this Incorporated Association are to advance the interests and to promote the welfare of Loyola of Montreal, the Association and its members, and to provide a vehicle through which former students of Loyola of Montreal may maintain their interest and express their support of their alma mater; to disseminate information among former students relating to developments at the College; to foster continuing contacts between former students, and to conduct projects, organize events and to do all other things necessary and useful for the College.

During the course of the year, the Loyola of Montreal Alumni Association Inc. sponsors a Golf Tournament, Oyster Party, the Sports Hall-of-Fame, a series of meetings between Loyola students and members of the Business, Academic and Professional Communities, social activities, cultural activities, sports activities, a Past-Presidents' Dinner and Alumnae activities, such as the Non-Tea and other events catering primarily to women graduates. It also sponsors the selection and presentation of the Loyola Medal to outstanding Canadians. A general Meeting is held every year. At this meeting officers and directors for the coming year are elected and all matters of general business transacted. The Loyola of Montreal Alumni Association Inc. sponsors the Alumni Students' Loan Fund.

Annual giving by Alumni represents the largest single source of support to universities and colleges in North America. A regular yearly contribution to the Association aids a variety of programmes at the College.

The office of Bernard McCallum, the Director of Alumni Affairs, is located in the Hackett Building 7270 Sherbrooke Street West, Room 25. Information can be obtained at 482-0320 Ext. 403.

Academic Regulations

FULL-TIME STUDENTS are those registered for the equivalent of four or more full-time courses a year, or the equivalent of 4 or more half courses each term.

PART TIME STUDENTS are those registered for the equivalent of less than four full courses.

A DEGREE CANDIDATE is a student proceeding to a degree.

A SPECIAL STUDENT is one who is not proceeding towards a degree.

Students in the University Programme will normally require three calendar years to obtain a Bachelor's degree. A student must be registered as a full time student for at least one academic year to receive a degree. He must have completed at least half of his programme at Loyola.

Normally, a student may not register for more than 4 academic years as a full-time student in the same faculty while in the university program.

The normal course load for each year is indicated in departmental programmes; an additional course may be taken with the approval of the Department Chairman and Dean of the Faculty.

To continue in a programme as a degree candidate, a student must have passed 2/3 of the cumulative total of courses for which he is registered in that programme. This cumulative total includes repeated courses and all courses completed in the Loyola University Programme or in equivalent programmes at other institutions following the acceptance of a student as a degree candidate at Loyola.

This is a minimum requirement. A department may recommend that a student not be allowed to register in that department even though the above conditions have been met.

If a student's record does not allow him to register, he may be permitted to take courses at Summer School in order to meet the requirements. This requires approval of the Departmental Chairman, and is subject to meeting the registration requirements of Summer School.

Normally, a degree candidate for an Honours Degree must have achieved a minimum of 65% in each of the courses of his major or majors. Students should consult the chairman of their department to determine requirements for each type of degree.

Degrees may be awarded with one of the following designations:

Summa Cum Laude	For an overall average in the courses taken at Loyola of 90% or more.
Magna Cum Laude	For an overall average in the courses taken at Loyola of 80% to 89%.
Cum Laude	For an overall average in the courses taken at Loyola of 70% to 79%.

Courses for which the student received "credit" or which were graded on a Pass-Fail basis will not enter into the calculation of this average.

One credit is equivalent to three hours of lectures per week for two terms.

It may be possible to take half of a full course for half course credit (1/2 credit), with the consent of the Department concerned.

Credit for Para-Academic Activity

A student may undertake a research project in conjunction with a para-academic activity for academic credit if the project is accepted by the Para-Academic Credit Board.

Para-Academic Activity is any ongoing activity which is not sponsored by departments or disciplines *per se*; but which allows within its range the possibility of research and reflection on the activity, and whose merit can be measured by a sponsor.

A Project is an undertaking by a single student which can be evaluated by a sponsor. Each Project may last no more than one academic year, and shall be the equivalent of one half credit (1/2 credit). The number of credits given for Para-Academic Activity shall be no more than one spread over three University years. A Project may take the place of an elective, but not of a required course.

The Sponsor of a project must be a full or part-time member of the Loyola faculty, and may not normally be a sponsor for more than three people.

The student selects the project and possible sponsor(s), and with the approval of the sponsor(s), submits a coherent outline of the proposed project to the Para-Academic Credit Board.

To be accepted, the project must meet the criteria of activity, reflection and presentation. With sufficient activity, resources and innovative ideas, the student must demonstrate that he has the means of completing the project, and that it will benefit him as a person within the context of his experience.

Change of Registration

"Change of Registration" forms are available at the Records Office and require approval of Chairmen of the Departments and Deans involved.

Change of registration includes transfer of Department or Faculty.

A student who wishes to change his registration must observe the following deadlines:

A) CHANGES INVOLVING REGISTRATION IN A NEW COURSE. First term half course or full course — registration must be completed before Oct. 1.

Second term half course — registration must be completed before Jan. 20.

B) CHANGES INVOLVING ONLY THE DROPPING OF A COURSE. First term half course — registration must be changed by Nov. 1.

Full course or second term half course — registration must be changed before March 1.

Graduation Registration

Degree candidates who expect to complete the requirements for a degree in a particular year must make application for that degree. Forms are provided by the Records Office, Room C215, and must be submitted before March 2 of that year. A student can receive only one degree in any given faculty, and only one degree in any given year.

A student who has graduated from Loyola and wishes to proceed to another

Exchange Students

degree must spend at least one more academic year as a full-time or part-time degree candidate. He must successfully complete a minimum of 5 courses other than those taken while registered for the first degree. He must register with a department in an approved programme.

A student may study for one year at another university and have his work credited towards his degree provided he has received prior approval to the course of study from his Chairman and Dean. It is the responsibility of the student to ensure that the course of study will satisfy the requirements of the programme he is following at Loyola. Only in exceptional circumstances may a student complete his final year as an exchange student. A student may take a course from another university-level institution with the approval of the Departmental Chairman and Dean.

Leave of Absence

A student who is considering interrupting his formal studies temporarily should consult the chairman of his department.

Grading and Examinations

Part of the final grade in a course will be given to term work, including written assignments, classes, seminar and tutorial participation, laboratories, term tests. The weight given to each of these items is decided by the individual instructor, subject to the approval of the department.

Normally, final written examinations are given in all courses at a time and place determined by the Registrar. A department may decide, however, that no final exam will be given in a particular course. This must be approved by the Dean of the Faculty, and communicated to the Registrar within the first four weeks of the course.

With the approval of the professor concerned, students may write their examinations, essays, term work etc. in French. The Departments of Languages and Literature establish their own particular departmental policy regarding this.

A student doing a Para Academic Activity Project presents the final report to the sponsor, who grades the project and transmits the grade to the Para Academic Credit Board. The Board transmits the grade for credit, together with a brief description of the project, to the Registrar.

Students are expected to attend all lectures, seminars, tutorials, and laboratory periods for which they are registered.

Each student will receive a final grade in each course for which he is registered. All final grades will be submitted on a numerical percentage bases, including pass-fail courses. The pass mark for all courses is 50%;

The grading scale for individual courses is:

A — First Class	80% and over
B — Second Class	65% to 79%
C — Third Class	55% to 64%
D — Pass	50% to 54%
F — Failure	00% to 49%

Supplemental Examinations

ARTS AND COMMERCE

Students registered in Arts and Commerce Faculties are not eligible for supplemental examinations.

SCIENCE AND ENGINEERING

Students registered in the Science and Engineering Faculties may write supplemental examinations in any of their courses in which they have failed. No student will be allowed to write more than two supplemental examinations in any one academic year (not including Summer School courses). These supplemental examinations may be taken only at the discretion of the course instructor and the chairman of the department in which the student is registered.

Aegrotat Standing

If a student is unable to complete the required work in a course because of illness, he may apply for aegrotat standing in that course. The application, accompanied by applicable documentation, should be made in writing to the Registrar. The department may recommend a grade, the award of a credit, a special examination, or any other action which it considers fair and appropriate.

Pass-Fail Courses

A full-time degree candidate may choose to take up to 5 elective courses (not more than 2 in one academic year) that will be marked either Pass or Fail on his final grade. The courses marked in this way will not enter into the student's average. This option must be exercised within 4 weeks of the beginning of the course. The student's decision should be sent in writing to the Registrar.

Cheating and Plagiarism

Essays and research papers should demonstrate the student's ability to think originally and to use sources intelligently. Plagiarism represents a failure to think critically or creatively, and will usually result in at least a failing grade for the assignment.

In general, plagiarism is an attempt to "pass off" the words or ideas of another author as one's own. It includes verbatim copying or translating, and/or paraphrasing directly or through translation without acknowledging the source by footnotes or quotation marks. This applies to a phrase, a sentence, a paragraph, an idea, or a pattern of ideas.

If the writer is conscientious, uses common sense, and has sufficient respect for his work as well as the work of others, plagiarism should not be a problem.

The penalties for cheating or deliberate plagiarism are severe. The minimum penalty is a grade of zero for the work involved. The student who requires more specific guidelines than are presented here, is advised to consult with the professor to whom he or she is submitting written work.

Appeals:

Every student has the right to appeal against the grade assigned to him in a particular course or a Para Academic Activity project. He/she should contact the Student Ombudsman for information and assistance.

The procedures for Student Appeals (Academic) adopted by Senate are as follows:

The student's first step for any appeal is to consult with the professor. It is every student's right to meet with his professor and discuss his work, exams, etc., and have them re-evaluated by the professor.

Should the first step prove unsatisfactory to the student his second choice is to appeal in writing to the Departmental Chairman. The student may or may not have already consulted the Student Ombudsman at this point.

The student must submit his appeal in writing to the Registrar within two weeks of the mailing of marks from the Records Office.

The Chairman, upon notification by the Registrar shall:

- (i) set up a Departmental Committee to review the student's term work, exams, projects, etc. It shall consist of two faculty members from the same discipline (other than the professor concerned), and either one student chosen by the chairman or a third faculty member chosen by the chairman should the student so desire;
- (ii) request from the student the written grounds for appeal, and also from the professor a written response to the appeal.

The Departmental Committee will meet within 7 days after the Chairman has constituted it, and make its report within 14 days.

The Committee will invite the two parties involved in the appeal (together if either party so requests), and all others who wish to testify, to appear before it for a personal interview. It shall arrive at a conclusion by meeting as often as necessary and reviewing any information offered on behalf of the professor or the student. The Committee shall, where possible, review the work of other students whose performance has been better, worse or equal to that of the student in question.

The Departmental Committee will convey in writing the decision of the Committee to the Student, Professor, Chairman, Dean, Registrar and the Student Ombudsman.

The next channel for appeal shall be open to appeals from either the student or the professor. The student/professor may appeal a departmental decision. This must be done within 7 days after notification. An appeal in writing should be sent to the Secretary of Senate.

The appeal will be considered by the Board of Appeals. This Board will consist of 2 faculty members and 2 students. The 4 members of the Board will receive a copy of the written appeal from the Secretary of Senate. The Nominating Committee of Senate will establish a panel of professors and students to serve on the Appeals Board on a rotational basis. The Board will itself select a fifth member, who may be a student or a faculty member, and who may or may not be a member of Loyola College. The Board will elect one of its own members to serve as Chairman.

In making an appeal to the Board of Appeals, the student/professor must give the grounds for the appeals. If the Board decides that the grounds are insufficient then it may refuse to hear the appeal.

If the Board agrees to consider the appeal, then it will investigate the whole appeal thoroughly: procedures, the Departmental Committee report, and all relevant documentation. It will investigate any irregularities which it finds. If new evidence is presented for either student or professor, it will be sent back to the Board and if it is judged to be substantial, it will be deferred to the Departmental Committee for hearing. Then the Board will have the authority to call in any witnesses who can present evidence relevant to the case.

The decisions of the Board of Appeals shall require a majority vote (i.e. at least 3) by written ballot. If no majority vote is obtained, the decision of the Departmental Committee stands. The decision shall be conveyed in writing to the Student, Professor, Chairman, Dean, Secretary of Senate, the Registrar and the Student Ombudsman.

Decisions of the Board of Appeals are final.

Admissions

The Admissions Officers will be glad to assist any applicant who may foresee some difficulty with his or her application. Please write or phone the Admissions Office to arrange an interview.
482-0320, Ext. 407-408

Applications may be obtained from:
Grendon E. Haines, Director of Admissions
George S. Oakes, Assistant Director of Admissions
Inez McAsey, Office Manager

Admissions Office
Loyola of Montreal
7141 Sherbrooke Street West
Montreal 262, Quebec

INSTRUCTIONS FOR ADMISSION TO LOYOLA OF MONTREAL

The following documents are required to complete your Application to Loyola Montreal:

- 1) APPLICATION FORM — fully completed by applicant
- 2) ACADEMIC LETTER OF RECOMMENDATION
- 3) Two Official Transcripts from the last institution attended —
For ADVANCED STANDING — two Official Transcripts mailed directly to Loyola from each Academic Institution attended
- 4) No Application Fee for Canadian and United States students
- 5) \$10.00 Application Fee for other students to cover postage, handling and cables
- 6) Proof of birth required for students over 21 years if qualifying for Mature Student Programme
- 7) Application Deadline: June 1 for September; Dec. 1 for January Registration

Admission Information

Loyola is now phasing out its college-equivalent programme; consequently, the first year of the Collegial Programme will not be offered in 1973-74. The second and final year of the Collegial Programme will be offered in 1973-74 but not in subsequent years. University I, II, and III will continue to be offered in the future. Students may be eligible for admission to Collegial II with a Grade XII or its equivalent for the academic year 1973-74. Students entering at this level normally take four academic years to complete their requirements for degree.

Admission to University I

Quebec CEGEP Graduates:

To be eligible for admission to the First Year of the three-year University Programme, candidates from Quebec must have successfully completed the two-year Collegial or CEGEP programme, and be in possession of the Collegial Diploma. In the faculties of Arts and Commerce the Collegial Diploma will suffice; however, specific requirements are recommended in the Faculty of Science and Engineering.

Loyola's academic requirements are flexible to a certain extent. An applicant seriously interested in a specific programme at the University level but

lacking one or more pre-requisites or required courses would be wise to contact the Chairman of that Department. It is very likely that an arrangement could be worked out so that with an additional course load or Summer Session courses, the student would be qualified to graduate in that particular programme within three years.

PRE-REQUISITES

Arts and Commerce:

There are *NO SPECIFIC REQUIREMENTS* — no matter what the concentration is to be at the University level. Applicants are advised or recommended to take introductory and if possible intermediate level courses in the area in which they wish to concentrate. The only exception would be in the area of Mathematics as a concentration at the University level in the Faculty of Arts.

In Commerce, it is recommended that the student has completed courses equivalent to Mathematics 101, Business 300Z, Accounting 300Z, and Economics 200. However, deficiencies in these papers will not bar entry.

Science:

To be eligible to enter the Science Faculty, students must present papers equivalent to Chemistry 112 (T/L) — (CEGEP 101, 201), Physics 101 — (CEGEP 101, 201), Mathematics 120 and Mathematics 131 — (Calculus I and II).

Engineering

Students are directed to consult with the Dean of Engineering.

Admission beyond the University I level will be considered individually on the basis of documents presented. Normally, an academic course with 6 semester hours is accepted as one full credit.

Admission to Collegial II

A) Students who have successfully completed twelve (12) years' schooling in English may be considered for Admission to the Second Year of the Collegial Programme.

B) Students Graduating from American (U.S.) Grade 12

Students who have successfully completed twelve years' schooling, in possession of the Grade XII Certificate with the College Recommending Mark as specified by the particular high school, may be considered for admission to the Second Year of the Collegial Programme, provided that they have a minimum of sixteen (16) academic units.

C) Students Graduating from Overseas High School Systems

Admission of foreign students to the Collegial II level or University level are considered on an individual basis on documents presented to the Admissions Office. If a potential student has twelve years of schooling, he would normally be accepted into Collegial II.

HONG KONG: Hong Kong Certificate of Education — in five subjects excluding English Language with a Grade C or better.

BRITISH SYSTEM: "O" levels — Five "O" levels, excluding English Language; three "O" levels and two "A" levels into University I.

Mature Students

The Admissions policy is flexible with regard to students that apply under a "Mature Student" basis. Students over 21 years of age whose secondary schooling may have been interrupted for one reason or another, and who

have worked for several years, may be considered for admission. Normally an interview between the applicant and an Admissions Officer is advisable and written proof of age is required (21 years or over) for applicants wishing to qualify for the "Mature Student" programme.

The programme for Mature Students is considered as the equivalent of 21 full courses and all Mature Students upon entrance must consult with the Chairman prior to Registration.

The following breakdown of courses is recommended for students in their first year of study at the pre-university level:

a) ARTS: 6 elective credits

b) COMMERCE: 6 electives, but the following is recommended:

..... the sequence of selecting these courses to be decided in consultation with the Department Chairman.

Accountancy	Business Administration	Computer Science	Economics
Math. 101	Math. 101	Math. 101	Math. 101
Bus. 300Z	Bus. 300Z	Bus. 300Z	Econ. 300Z
Econ. 300Z	Econ. 300Z	Econ. 300Z	Elective
Elective	Elective	Comp. Sc. 221	Elective
Elective	Elective	Elective	Elective
Elective	Elective	Elective	Elective

c) SCIENCE: *

..... the sequence of selecting these courses to be decided in consultation with the Department Chairman.

Bio-Physical Education	Biology	Chemistry	Computer Science
Biology 230	Biology 230	Chem. 112 (T/L)	Computer Science 211 - half course
Chem. 112 (T/L)	Chem. 112 (T/L)	Math. 120 - half course	Computer Science 241 - half course
Math. 131 A/B	Math. 120 - half course	Math. 131 (A/B)	Math. 120 - half course
Physics 101	Math. 131 (A/B)	Math. 232	Math. 131 (A/B)
Elective	Physics 101	Physics 101	Math. 232
Elective	Elective	Elective	Elective
	Half elective	1 elective	Elective
			Half elective
Mathematics	Physics	Psychology	
Chemistry 112 (T/L)	Chemistry 112 (T/L)	Biology 230	
Math. 120 - half course	Math. 120 - half course	Chemistry 112 (T/L)	
Math. 131 (A/B)	Math. 131 (A/B)	Math. 120 - half course	
Math. 232	Math. 232	Math. 131 (A/B)	
Physics 101	Physics 101	Math. 232	
Elective	Elective	Physics 101	
Half elective	Half elective	Half elective	

*IT IS RECOMMENDED THAT A MATH. COURSE BE TAKEN DURING THE SUMMER PRIOR TO REGISTRATION. PLEASE CONSULT YOUR DEPARTMENT CHAIRMAN.

d) ENGINEERING: Please consult with the Dean of Engineering

NOTE: For a description of the above courses please refer to the Collegial Calendar, available from the admissions office.

Guide to Placement for Mature Students

A) High school students with or without eleven years of scholarship go into the 21-credit programme.

B) Students with twelve years of scholarship might be given advanced standing.

Application deadline for the Winter Session is July 15 and for the January Session is December 1 — DAY DIVISION. May 25 is the deadline for the Summer Session.

CEGEP Students: Students who entered the CEGEP Programme in the province of Quebec when they were under 21 years of age are not normally eligible for the Mature Student Programme.

Tests: Applicants to the Mature Student Programme are not normally required to write entrance tests.

Programme Structure: Students will register in one of four programmes — Pre-Arts, Pre-Commerce, Pre-Engineering, and Pre-Science.

Credit: One full credit (course) is equivalent to 6 semester hours, that is, 3 hours of lecture a week for two terms (semesters).

Successful completion of the appropriate six courses, or their equivalent in half courses, will make the student admissible to the 15-credit undergraduate programme. Normally, five full courses are taken in one academic year, that is, September to April.

Tuition — Fees: Students admitted to the first year of the 21-credit programme pay *collegial tuition fees*, activity fees, and special fees.

Tuition and Fees

TUITION AND FEES MUST BE PAID AT THE TIME OF REGISTRATION

However, a student may, in special cases of hardship and with the consent of the Supervisor of Accounts Receivable, pay Tuition and Fees in two instalments. Tuition covering the first term, and all other fees, must be paid in full at registration. Tuition covering the second term must be paid in full on or before 10th January following. In such cases an instalment fee of \$10.00 will be charged. Evidence of Loyola Scholarship Awards or Loyola Bursaries must be submitted at time of registration. If a partial Loyola Scholarship or Bursary is awarded, the balance of Tuition and Fees must be paid at registration. Students who have applied for Provincial or Federal Government Bursaries must still settle their Tuition and Fees at registration in accordance with the above.

Students will not be considered registered and may not attend classes until the required fees have been paid or arrangements for payment made with the Supervisor of Accounts Receivable.

Failure to make payments of Tuition and Fees or other amounts owed the College when due, or to arrange for such payments before their delinquent dates, is sufficient cause to bar the student from classes or examinations and to withhold Diploma, Scholastic Certificate or Transcript of Record until the debt has been adjusted with the Accounts Receivable Office.

Fees must be paid at due date. Postdated cheques will not be accepted.

If cheques are returned to the college marked "Not Sufficient Funds", there will be a \$5.00 charge.

A \$15.00 SURCHARGE WILL BE ADDED TO ALL UNPAID FEES AS OF JANUARY 15.

NO REFUNDS WILL BE RETURNED SHOULD THE COLLEGE CLOSE FOR A BRIEF PERIOD AS A RESULT OF A FORTUITOUS EVENT.

Tuition

University Programme

Arts (General Course)	\$270.00 per half year	\$540.00 per year
Communication Arts	287.50 per half year	575.00 per year
Science	287.50 per half year	575.00 per year
Engineering	297.50 per half year	595.00 per year
Commerce	270.00 per half year	540.00 per year

2nd Year Collegial Programme.

All students \$187.50 per half year,
\$375.00 per year.

THE ABOVE FEES WERE APPLICABLE TO 1972-73 ACADEMIC YEAR, AND ARE SUBJECT TO CHANGE FOR THE 1973/74 ACADEMIC YEAR WITHOUT NOTICE.

All payments must be made in Canadian funds or Canadian equivalent. Drafts, cheques, money orders, etc. should be made payable at par to Loyola College and sent to:

Accounts Receivable Department
Loyola of Montreal
7141 Sherbrooke St. West
Montreal 262, Quebec.

Student Activities Fee

PAYABLE AT REGISTRATION

*Loyola Students' Association	\$20.00
*Student Centre Building Fee	20.00
*Loyola Athletic Association	17.00
TOTAL	\$57.00

*Required by all students taking 3 or more courses

Special fees

PAYABLE AT REGISTRATION

Tuition for single or extra subject in addition to a regular programme	\$100.00
Registration Fee (payable on first entrance only)	5.00
Late Registration Fee	15.00
Library Fee (compulsory)	5.00
Medical Fee (compulsory)	3.00
Accident Insurance (compulsory)	5.00
*Graduate Fee — 3rd year students (compulsory)	20.00
*Comprehensive Sickness and Hospitalization (Required by all non-Canadian students)	37.00
*Lockers: Rental	5.00
Locks	2.00
(College locks must be used. \$1.00 will be refunded for each lock in good condition labeled with combination. Refunds at Bookstore between April 15 and May 15 only.)	

*To be paid in cash at time of registration.

PAYABLE ON DATE OF EACH APPLICATION

Supplemental Examinations each	\$ 7.00
Special Examinations	15.00
*Transcripts (Full)	1.00
*Transcripts (Partial)	.50
Parking Permit (Cash)	10.00
Local Examination of Privileges (Cash)	15.00
Certificate of Official Receipt	2.00
*To be released only when all outstanding balances have been paid.	

Withdrawals and Adjustments

Any student who is forced to withdraw from the College must notify the Registrar in person or in writing. Telephone calls will not be accepted. Withdrawal notices for refund are effective on date of receipt by the Registrar. A refund of TUITION ONLY will be made from the date of withdrawal on the following basis:

Registration date to Sept. 30	Year's basic tuition less 1/8
October 1 to October 31	Year's basic tuition less 2/8
November 1 to November 30	Year's basic tuition less 3/8
December 1 to January 15	Year's basic tuition less 4/8
January 16 to January 31	Year's basic tuition less 5/8
February 1 to February 28	Year's basic tuition less 6/8
March 1 to March 31	Year's basic tuition less 7/8
After March 31	NO REFUND

STUDENT ACTIVITY FEE AND OTHER SPECIAL FEES ARE NOT REFUNDABLE.

Residence Fees

MEALS —

The regular room contract at Loyola does not include meals. Meals can be contracted for on a yearly basis at a cost of approximately \$450.00 for two meals a day five days a week (lunch and dinner) and \$570.00 for three meals a day. The dining room is closed Saturdays, Sundays and holidays. Several other plans are in effect and the student may choose the one most suitable to his needs. He may also prefer to pay as he goes on an 'à la carte' basis anywhere on campus.

RESIDENCE —	Single Room	Double Room	Single with Bath
Room	\$595.00	\$515.00	\$705.00
Activity Fee**	13.00	13.00	13.00
Damage & Development Fee**	15.00	15.00	15.00
Damage Deposit (Refundable)**	50.00	50.00	50.00
TOTAL	\$673.00	\$593.00	\$783.00
Telephone Fee*	7.00	7.00	7.00
	\$680.00	\$600.00	\$790.00

* Applies to Langley Hall only.

** Payable at Registration.

The room deposit of \$50.00 must accompany each application and will be deducted from the payment due on entrance. The money will be refunded on request if the student is not accepted, or cancels the room reservation by September 1.

The College reserves the right to place the student in whatever room seems to be in the best interests of the student's programme as a whole, but careful consideration will be given to expressed preferences.

No student will be permitted into residence before settlement of the account has been made. For this purpose, a receipt covering at least the first term must be shown to the Director of Housing.

Fees do not cover the Christmas holidays. A charge will be made to students who wish to remain during the holidays.

Residents are required to vacate their rooms within 24 hours of the last examination of the academic year.

Residence fees may be paid in two instalments. The first instalment covering the first term must be paid in full at registration. The second term fees must be paid before January 10.

In cases where cheques are returned to the College marked "Not Sufficient Funds" there will be a \$5.00 charge.

A \$15.00 surcharge will be added to all unpaid fees as at January 15th. Postdated cheques will not be accepted.

The College reserves the right to make changes without notice in the published scale of fees if, in the opinion of the College, circumstances so require.

All residence fees are payable in Canadian Funds, or Canadian equivalent, and cheques should be made payable to Loyola College.

To ensure favourable consideration of your application, it is recommended that you apply before August 15.

FOOD SERVICES

Hingston Hall Dining Room:

'A la carte' service and special hot meals daily. Open to all students. Seating capacity 230. Closed on Saturdays, Sundays and holidays.

Student Cafeteria (Canteen):

Vending machines plus facilities for students who bring lunch. Seating capacity 250.

Loyola Campus Centre:

'A la carte' service and special hot meals daily. Seating capacity 210.

Directory

Board of Trustees of Loyola College

Dr. R. J. Brodrick	
Rev. L. T. Carroll, S.J.	
Rev. K. Casey, S.J.	
*Mrs. Eileen deNeeve	— Honorary Secretary
Rev. I. Desrochers, S. J.	
*Rev. N. Dodge, S.J.	
*Rev. S. Drummond, S. J.	— Chairman
Mr. Peter Fedele	
Mr. Paul Gallagher	
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Mr. R. L. Grassby	
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Mr. R. Maione	
*Mr. C. S. Malone	
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Dr. J. T. McIlhone	
*Mr. D. W. McNaughton	
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*Rev. C. C. Ryan, S.J.	— Treasurer
*Rev. J. W. Rye, S.J.	
Rev. J. Schuck, S.J.	
Rev. L. Stanford, S.J.	
Rev. G. Tait, S.J.	
Mr. R. Duder	— Secretary
*Members of the Executive Committee	

Members of Senate

EX-OFFICIO

Very Rev. P. G. Malone, S.J.
 Dean A. Audet
 Dean L. Bessner
 Rev. R. Breen
 Rev. A. Graham, S.J.
 Dean G. Joly
 Mr. J. Noonan
 Mr. D. Potvin
 Mr. J. Princz

ELECTED — ARTS

Dr. G. Adams	term ends June 30, 1974
Prof. J. Blacklock	June 30, 1973
Mr. Donald Boisvert (Student)	June 30, 1973
Dr. G. Dewey	June 30, 1973
Mr. Guy Larin (Student)	June 30, 1973
Dr. A. Kawczak	June 30, 1973
Prof. J. Moore	June 30, 1975
Prof. R. Porter	June 30, 1975
Prof. E. Preston	June 30, 1975
Dr. P. Richardson	June 30, 1973
Prof. G. Saint-Pierre	June 30, 1974
Prof. M. Tiffou	June 30, 1974
Miss Peggy Vajo (Student)	June 30, 1973

ELECTED – COMMERCE

Prof. P. Kawaja June 30, 1974
 Mr. S. MacKinnon (Student) June 30, 1973
 Prof. J. Norris June 30, 1975

ELECTED – EVENING DIVISION

Mr. Rick Trottier (Student) June 30, 1973

ELECTED – ENGINEERING

Prof. V. Stefanovic June 30, 1973

ELECTED – SCIENCE

Mr. Richard Brayley (Student) June 30, 1973
 Dr. M.S. Dubas, S.J. June 30, 1975
 Mr. L. Olszewski (Student) June 30, 1973
 Dr. R. Pallen June 30, 1974
 Prof. R. Smith June 30, 1973
 Prof. J. Soric June 30, 1974
 Dr. R. H. Zienius June 30, 1975

Committees of Senate

These committees are set up by the Nominating Committee of Senate which is composed of the Academic Vice-President, who is Chairman, and four Senators, one from each faculty. The members of these committees are chosen from the student body, faculty and administration and Senate then approves the final composition of the committees. Anyone wishing to be a member of one of these Senate Committees should contact the Academic Vice-President.

The following Committees, on most of which student-faculty parity exists, are now in existence: Academic Standing, Task Force to study the Administrative and Academic Structures of the New University; Admissions; Budget; Cooperative Education; Curriculum; Elections and Privileges; Evening Division; Executive Committee of Senate; Faculty Qualifications and Procedures; French; Inter-disciplinary Studies; Learning Development; Library Board; Nominating Committee of Senate; Para-Academic Credit Board; Prospectus; Research; Scholarship; Student Life; Visiting Lecturers.

Officers of Administration

PRESIDENT: Very Rev. Patrick G. Malone, S.J., B.A., Ph.L., M.A., S.T.L.
ASSISTANT TO THE PRESIDENT: R. P. Duder, B.A., M.A.
VICE-PRESIDENT, ACADEMIC: (to be announced)
ASSISTANT TO THE ACADEMIC VICE-PRESIDENT: P. Richardson, B.A., B.D., Ph.D.
VICE-PRESIDENT, ADMINISTRATION: A. J. Ferrari, B.Comm., C.A., R.I.A.
DEAN OF ARTS: Rev. R. Breen, B.A. B. Th., S.T.L., M.S., Ph.D.
ASSISTANTS TO THE DEAN OF ARTS: H. Habib, B.A., M.A., Ph.D., S. McEvenue, B.A., Lic.Phil., M.A., Lic. Theo., Lic.Sac.Scr., S.S.D.
DEAN OF SCIENCE: Rev. J. A. Graham, S.J., B.A., M.A., S.T.L.
DEAN OF COMMERCE: L. BESSNER (on sabbatical)
DEAN OF ENGINEERING: G. W. Joly, B.A., B.Eng., M.Eng.
DIRECTOR OF EVENING DIVISION: D. J. Potvin, B.A., B.Ed.
DIRECTOR OF COLLEGIAL STUDIES: G. Gross, B.A., M.F.A.
DEAN OF STUDENTS: A. Audet, B.A., B.Ped., Lic.Theo.
CHAPLAINS: Fr. C.Pottie, S.J., Fr. R. Gaudet, S.J., Sr. Clare O'Neill, C.N.D.
CHIEF LIBRARIAN: J. Princz, B.A., M.A.
TREASURER: Rev. C. C. Ryan, S.J., B.A., S.T.L.
REGISTRAR: J. W. Noonan, B.Sc.
DIRECTOR OF DEVELOPMENT: J. S. Dorrance, B.A., M.A.

DIRECTOR OF ALUMNI AFFAIRS: B. H. McCallum, B.A.
DIRECTOR OF PUBLIC RELATIONS: A. Burke Kerrigan, B.A.
DIRECTOR OF ADMISSIONS: G. Haines, B.A., B.Ed.

REGISTRAR**Administrative Offices**

REGISTRAR: J. W. Noonan, B.Sc.
ASSOCIATE REGISTRAR: T. A. Murphy, B.Comm.
ASSISTANT REGISTRAR (Records): E. Gibbons
ASSISTANT TO THE REGISTRAR: M. Boronkay, B.A.
ASSISTANT TO THE REGISTRAR: G. Frain, B.Comm.
DIRECTOR OF ADMISSIONS: G. Haines, B.A., B.Ed.
ASSISTANT DIRECTOR OF ADMISSIONS: G. Oakes, B.Comm.

FINANCE, BUSINESS AND FACILITIES

VICE PRESIDENT, ADMINISTRATION: A. J. Ferrari, B.Comm., C.A., R.I.A.
RESEARCH ASSISTANT: A. Guadagni,
TREASURER: Rev. C. C. Ryan, S.J., B.A., S.T.L.
COMPTROLLER: A. L. Lee, B.Comm.
ASSISTANT TO THE COMPTROLLER: E. Dudas
SUPERVISOR OF ACCOUNTS PAYABLE: I. Gold
SUPERVISOR OF ACCOUNTS RECEIVABLE: M. Callaghan
SUPERVISOR OF PAYROLL: M. Armstrong
DIRECTOR OF ADMINISTRATIVE DATA PROCESSING: G. Castleman
ASSISTANT DIRECTOR: P. Paquet, B.Comm.
SUPERVISOR, OPERATIONS SECTION: R. Orsini
DIRECTOR OF ANCILLARY ENTERPRISES: J. A. Woodcock
MANAGER OF BOOKSTORE: P. Gore
DIRECTOR OF HOUSING: (to be announced)
EVENTS COORDINATOR: L. Price
DIRECTOR OF PERSONNEL: M. E. McMullan, B.A.
DIRECTOR OF PHYSICAL PLANT: J. B. Kelly, B.Sc.
SUPERINTENDENT, BUILDINGS AND GROUNDS: W. Condie
DIRECTOR OF PURCHASING: R. J. Lennen
SUPERVISOR OF PROPERTY AND PROJECT CONTROL: J. B. Bryson
MANAGER OF REPRODUCTION SERVICES: R. Boyce
DIRECTOR OF SECURITY: L. Carroll

STUDENT SERVICES

DEAN OF STUDENTS: A. Audet, B.A., B.Ped., Lic. Theo.
DEAN OF MEN: G. V. Uihlein Jr., B.Sc., M.Sc.
ASSISTANT DEAN OF STUDENTS: B. T. Counihan, B.A., M.Ed.
ASSISTANT DEAN OF STUDENTS: M. Taylor, B.A., M.A.
DIRECTOR OF STUDENT RESIDENCES: (to be announced)
DIRECTOR OF FINANCIAL AID: F. Haffey
DIRECTOR OF CANADA MANPOWER CENTRE: E. Allen
DIRECTOR OF ATHLETICS & PHYSICAL EDUCATION: E.F. Enos, B.Sc., M.Ed., Ph.D.
CHAPLAINS: Fr. C. Pottie, S.J., Fr. R. Gaudet, S.J., Sr. Clare O'Neill, C.N.D.
SUPERVISOR OF HEALTH SERVICES: M. Wheeler, R.N.
NURSE: N. Cullen, R.N.
DIRECTOR OF GUIDANCE SERVICES: (to be announced)
DIRECTOR OF MUSIC: E. Haughey, L.R.A.M., A.R.C.M.

LIBRARIES

CHIEF LIBRARIAN: J. Princz, B.A., M.A.

DEVELOPMENT

DIRECTOR: J. S. Dorrance, B.A., M.A.
ASSOCIATE DIRECTOR: Rev. C. C. Ryan, S.J., B.A., S.T.L.

DIRECTOR OF ALUMNI AFFAIRS: B. H. McCallum, B.A.

PUBLIC RELATIONS

DIRECTOR: A. Burke Kerrigan, B.A.

OFFICE OF PLANNING

CO-ORDINATOR: Rev. C. C. Ryan, S.J., B.A., S.T.L.

DIRECTOR: J. J. McAsey, B.A.

LOYOLA FACULTY ASSOCIATION

PRESIDENT: G.W. Adams

VICE PRESIDENT: J. Norris

SECRETARY: L. McKiel

TREASURER: C. Kalman

Course Designations:

Course designations are standard.

- A HALF COURSE FIRST TERM
- F FULL COURSE (ACCELERATED) IN THE FIRST TERM ONLY
- B HALF COURSE SECOND TERM
- S FULL COURSE (ACCELERATED) IN SECOND TERM ONLY
- Y HALF COURSE EXTENDED OVER THE ENTIRE YEAR
- Z NORMAL COURSE OVER TWO TERMS



Faculty of Arts

The Faculty of Arts offer a variety of programs to suit the varied needs and interests of all students.

HONOURS: Provides intensive and extensive study in a specified area. In most cases, students who wish to pursue graduate studies will require an honours degree. Honours programs are offered in Classics, Economics, English, French Studies, German History, Italian, Philosophy, Political Science, Sociology, Spanish, and Theology.

MAJOR: Provides solid preparation in a chosen area. Major programs are offered in Classics, Communication Arts, Drama, Economics, English, French, German, History, Italian, Modern Languages, Philosophy, Political Science, Psychology, Sociology, Spanish and Theology.

AREA OF CONCENTRATION: Provides less intense concentration in any given field, and the choice of wider electives in other fields. Students may register with any department in the Arts Faculty. Concentrations have been specially organized in the History of Civilization, the Third World, and Chinese Studies. Students may register in these through the Centre for Interdisciplinary Studies.

CERTIFICATE OF PROFICIENCY: The Department of French Studies offers a certificate of proficiency in French Language to those who satisfy certain requirements. It will be noted on the student's transcript.

SELF-ELECTED MAJOR: Offered through the Centre for Interdisciplinary Studies, particularly in the areas of Drama, Canadian Studies and Community Development. Students interested in these, or in defining a major concentration according to personal interests which transcend the usual departmental lines, should contact the Director of the Centre for Interdisciplinary Studies.

JOINT HONOURS AND JOINT MAJOR: Programs developed by two or more departments to provide a different kind of preparation for the student. While further joint programs are being designed, the following are available at present:

Joint Honours: English and History

Joint Major: Economics and Political Science
English and History
English and Modern Languages
German and Italian, or Russian, or Linguistics
Italian and Russian, or Spanish, or Linguistics
Spanish and Russian, or Linguistics
Russian and Linguistics
Mathematics & Economics
Mathematics & Philosophy

DOUBLE MAJOR: A program available for students who wish to complete all requirements for major degrees in two departments. Students are urged to consult with the Dean of Arts or the Chairman of the Department in which they wish to concentrate before registration. Some electives in any program may have to be selected from a list provided by Senate.

DEAN

BREEN, Rev. R. W., B.A. (Montreal),
B.Th., S.T.L. (Montreal), M.S. (Fordham),

Ph.D. (Strasbourg). Associate Professor
of Theological Studies.

ASSISTANTS TO THE DEAN

HABIB, H. P., B.A. (American University of Beirut), M.A. (Fordham), Ph.D. (McGill),
Associate Professor of Political Science. (on leave)
McEVENUE, S. E., B.A. (Montreal), L.Ph. (Montreal),
M.A. (Halifax), S.T.L. (Montreal), S.S.L. (Rome),
S.S.D. (Rome), Associate Professor of Theological Studies.

CLASSICS

Associate Professor

BROWN, D., A.B. (Xavier University), Ph.D. (Tuebingen). (Chairman)

Assistant Professors

CASEY, S. C., S.J., B.A., B.Paed. (Manitoba),
L.Ph., (Immaculate Conception), M.A., (St. Mary's),
M.A., Ph.D., (McGill)
PRESTON, E. M., B.A. (University of Manchester), M.A. (McGill)
SANDERS, L. J., B.A., M.A., (London), Ph.D., (McMaster)
WARDY, B., B.A. (McGill), M.A. (McGill)

COMMUNICATION ARTS

Professor:

BUELL, J., B.A. (Montreal), M.A. (Montreal), Ph.D. (Montreal)

Associate Professors

FISCHER, C.J., S.J., B.A. (Montreal), S.T.L. (Immaculate Conception), M.A. (Stanford).
GAGNON, C. Associate of the Royal Canadian Academy of Arts.
Graduate of New York School of Design.
MALIK, M., M.L. Baccalaureat 1951 (Boleslav Academy, Czechoslovakia)
D.Sc. FAMU (Prague).
O'BRIEN, J. E., S.J., B.A. (Montreal), S.T.B. (St. Mary's University) S.T.L. (Regis, Toronto), Ph.D. (Southern California). (Chairman).

Assistant Professors

GERVAIS, M., S.J., B.A. (Montreal), L.Ph. (Immaculate Conception),
M.F.A. (Catholic University of America), M.A. (St. Mary's).
GILSDORF, W., B.A. (Baldwin-Wallace), M.A. (Bowling Green), Ph.D. (Michigan).
TIERNEY, J., B.S. (Seton Hall), M.A. (Seton Hall). Ph.D. (Indiana).
VALASKAKIS, G., B.Sc. (Wisconsin), M.A. (Cornell).

Lecturers

DINIACOPOULOS, D., B.A. (Montreal). (Special Lecturer)
MIRABELLI, A., B.A. (Montreal), M.A. (Fairfield).
MURPHY, D.J., B.A. (Montreal), M.A. (San Francisco State College).

ECONOMICS

Associate Professors

ALVI, S. A., B.A. (Karachi) M.A. (Karachi), Ph.D. (Colorado) (Chairman)
HAYES, F. J., B.Sc. (London), Ph.D. (McGill).
LALLIER, A. G., B.A. (McGill), M.A. (Columbia), International Affairs
Certificate (Russian Institute, Columbia).

Assistant Professors

LIU, Z. R., B.A. (Soochow University Taipei, Taiwan), M.A. (Vanderbilt), Ph.D. (Colorado).
TAKAHASHI, A., B.A. (Maiji University, Tokyo), M.A. (Hawaii).
WRIGHT, B., B.A. (University of South Africa) M.A. (University of South Africa).

ENGLISH

Professor

HOOPER, A. G., B.A. (Leeds), M.A. (Leeds), Ph.D. (Leeds).

Associate Professors

BROES, A. T., B.A. (Manhattan College), M.A. (Columbia), Ph.D. (University of Pittsburgh).
HERZ, J., B.A. (Barnard), M.A. (Rochester), Ph.D. (Rochester). (Chairman)
NEWELL, A., B.A. (Pittsburgh), M.A. (Pittsburgh), Ph.D. (Pittsburgh).
PHILMUS, M., B.A. (Brown University), Ph.D. (University of Ca' Foscari, Venice).
PHILMUS, R., B.A. (Brown University), Ph.D. (University of California).
WAREHAM, R. S., B.A. (R.M.C.) M.A. (University of Michigan).
ZUCKERMANN, J. P., B.A. (Oxford), M.A. (Oxford), D.Phil. (Oxford).

Assistant Professors

BUITENHUIS, E., B.A. (University of British Columbia), M.A. (New Brunswick), Ph.D. (McGill).
MARTIN, R. K., B.A. (Wesleyan University), M.A. (Brown University).
NOWICKI, L. P., B.A. (Montclair State College, N.J.) M.A. (New York University).
RAHM-HALLETT, L., A.B. (Washington University), Ph.D. (Cornell University).
SPENSLEY, P. J., B.A. (Wisconsin), M.A. (Wayne State), Ph.D. (Wayne State).
TAYLOR, D., B.A. (Toronto), M.A. (Toronto), Ph.D. (Toronto).
WATERS, K. E., B.A. (McGill), M.A. (Oxford).

ETUDES FRANCAISES

Professors

LABBE, G., B.A., D.Péd., L.ès L. (Montréal), Doct. de l'Univ. (Paris).
LAUZIERE, A., B.A. (Ottawa), M.A. (Montréal), Doct. de l'Univ. (Paris).
TOUPIN, P., B.A. (Montréal), M.A. (Columbia), Doct. de l'Univ. (Aix-en-Provence).

Associate Professors

ANDERSEN, M., Staatsexamen, (Frei Universität, Berlin), Ph.D. (Montréal).
LAURION, G., L.ès.L. (Montréal). Dipl. d'Et. Sup., Doct. de l'Univ. (Paris). (Chairman)
ROUBEN, C., B.A. (Sir George Williams), L.ès Sc. (Paris), M.A., Ph.D. (McGill).

Assistant Professor

LEVY, D., L.ès L. (Bordeaux), Dipl. d'Et. Sup. (Montréal), Doctorat Du III^e Cycle (Paris).
SUGDEN, L. W., B.A., B.Ed., M.A. (Manitoba), Doct. l'Univ. (Nice).

HISTORY

Professor

O'KEEFE, C. B., S.J., B.A. (Montreal), M.A. (Toronto), Ph.D. (Toronto).

Associate Professors

ADAMS, F. G. W., B.A. (Toronto), M.A. (Toronto), Ph.D. (Chicago).
AKIN, W. E., B.A. (Maryland), M.A. (Maryland), Ph.D. (Rochester). - (Chairman)
COOLIDGE, R. T., B.A. (Harvard), M.A. (California-Berkeley), B.Litt. (Oxford).

Assistant Professors

DECARIE, M. G., B.A. (S.G.W.U.), M.A. (Acadia), Ph.D. (Queen's).
HUBBARD, W. H., B.A. (Oregon), M.A. (Columbia), Ph.D. (Columbia).
MASON, M., B.A. (British Columbia), Dip. Ed. (British Columbia), Ph.D. (Birmingham).
TITTLER, R., B.A. (Oberlin) M.A. (N.Y.U.), Ph.D. (N.Y.U.).
VIPOND, M., B.A. (Queen's), M.A. (Toronto).

Lecturer

PORTER, R. S., B.A. (McGill), M.A. (McGill).

INTERDISCIPLINARY STUDIES

Acting Chairman

McEVENUE, S. E., B.A. (Montreal), L.Ph. (Montreal), M.A. (Halifax), S.T.L. (Montreal), S.S.L. (Rome), S.S.D. (Rome), Associate Professor of Theological studies, assistant to the Dean of Arts.

MATHEMATICS

Professor

O'CONNOR, E., S.J., B.A. (St. Mary's), M.A. (Toronto), Ph.D. (Harvard) S.T.L. (Weston College Mass.).

Associate Professors

MAJUMDAR, K.N., B.Sc., M.Sc. (Calcutta), Ph.D. (Purdue).
PRILLO, A.J., B.Sc. (Montreal), M.A. (Toronto).
SRIVASTAVA, T.N., B.Sc. (Lucknow), M.Sc. (Lucknow), Ph.D. (Gorakhpur, India).

Assistant Professors

BOBETIC, M. V., B.A. (University of Zagreb), M.A. (University of Zagreb) Ph.D. (Waterloo, Ontario).
FAIERMAN, M., B.Eng. (McGill), B.Sc. (University of London), M.A. (University of Toronto), Ph.D. (Toronto).
KEVICZKY, A., B.Sc. (Fordham), M.Sc. (City College of the City University of New York).
KIM, H., B.Sc. (Seoul National University, Korea), M.Sc. (Seoul), Ph.D. (McGill).
MOORE, R. C., B.Sc. (Nottingham), M.Sc. (London).
SMITH, R. A., B.A. (Loyola), M.Sc. (University of Toronto).
SORIC, J., B.Sc. (McMaster), M.Sc. (McMaster). (Chairman).

Lecturers

KACHROO, D., F.Sc. (Kashmir), B.A. (Kashmir), B.Ed. (Kashmir), M.A. (Saugor), M.Sc. (McGill).
LORIMER, J. W., B.Sc., M.Sc., Ph.D. (McMaster University).

MODERN LANGUAGES

Professor

FONDA, C., Ph.D. (Paris), Ph.D. (Venice).

Associate Professors

ANTOLIN, F., B.A. (Leon, Spain), L.en L. (Madrid), D.en L. (Madrid).
FAMIRA-PARCSETICH, H., Staatsexamen, German Philology (University

of Innsbruck), Staatsexamen Physical Education, (University of Innsbruck), Ph.D. (McGill). (Chairman).

Assistant Professors

COSTANZO, A., B.A. (University of British Columbia) M.A. (University of Washington).
DiMICHELE, C., Ph.D. (University of Rome).
OTTOLENGHI, E., Certificat d'Etudes Francaises (Grenoble)
Certificat de Cours de Professeurs de l'Ecole Pratique de l'Alliance Francaise (Paris), M.A. (Middlebury).
SCHEER, H. W., B.A. (Alberta), M.A. (Alberta). Ph.D. (McGill).

PHILOSOPHY

Professors

HINNERS, R., B.A. (Harvard), M.A. (Toronto), Ph.D. (Toronto)
KAWCZAK, A., L.L.M., M.A. (Crakow), Ph.D. (Warsaw).

Associate Professors

DOYLE, J. P., B.A. (Montreal), M.A. (Montreal), B. Paed. (Montreal).
JOOS, E. F., B.A. (Budapest), M.A. (McGill), L.Ph. (Montreal), Ph.D. (Montreal).
LAU, H. H., Diplôme d'Etudes Supérieures de Philosophie (Saulchoir), M.A. (Montreal).
McGRAW, J. G., B.A. (Notre Dame), Ph.B., Ph.L. (Institute of Philosophy, Chicago), Ph.D. (Angelicum, Rome).
McNAMARA, V. J., B.A. (Toronto), M.A. (Laval), L.Ph. (Laval). D.Phil. (Laval).
MORGAN, J., B.A. (Loyola, Los Angeles), M.A. (Southern California), Ph.D. (Southern California). (Chairman).
PARK, D., B.A. (College of William and Mary), M.A. (McGill), Ph.D. (Indiana).
REIDY, M. F., A.B. (Boston College), M.A. (Toronto), Ph.D. (Toronto).

Assistant Professors

CAVANAUGH, B. R., B.A. (Providence College), M.A. (Catholic University of America).
EGAN, E., B.A. (Manhattan College), M.A. (Fordham), Ph.D. (Fordham).
GRAY, C. B., A.B. (St. Bonaventure), M.A. (Catholic University of America). Ph.D. (Catholic University of America).
O'CONNOR, D., B.A., Ph.D., (St. Louis University).
O'HANLEY, L., B.A. (St. Dunstan's University), L.Ph. Philosophy (College de l'Immaculée Conception), M.A. (Marquette U.).

POLITICAL SCIENCE

Associate Professors

HABIB, H. P., B.A. (American University of Beirut), M.A. (Fordham), Ph.D. (McGill). Assistant to the Dean of Arts. (On Leave).
OH, KI SONG, B.A. (Chou College, Tokyo), LL.B. (Tokyo), M.A. (University of Pennsylvania), Ph.D. (Pennsylvania).

Assistant Professors

COYTE, R., B.A. (Oxford), Diploma in Political Science and Economics (Oxford), M.A. (Oxford). (Chairman).
DANIS, M., B.A. (Montreal), M.A. (Fordham), LL.L. (Montreal), Diplôme en droit Constitutionnel et Science Politique, (Paris).
LASZLO, L., B.A. (University of Illinois), M.A. (Columbia), Ph.D. (Columbia).
MOORE, J. W., B.A. (Carleton), M.A. (Toronto).
PRICE, E., Doctorate de Spécialité d'état Française (Grenoble).

PSYCHOLOGY

Associate Professors

BABARIK, P., B.A. (Toronto), M.A. (Toronto), Ph.D. (Chicago).
BAUER, J. H., B.A. (Sir George Williams), M.A. (Manitoba), Ph.D. (Manitoba) (Chairman).
LADD, H. W., B.Sc. (University of Vermont), M.A. (Windsor), Ph.D. (Windsor).
MAHEUX, V., B.A. (Montreal), M.A. (Catholic University of America), L.Ph. (Laval), Ph.D. (McGill).

Assistant Professors

CAMPBELL, J., B.A. (Reading University, Berkshire, England)
LAMBERT, R. M., B.A. (University of Miami), Ph.D. (University of Pennsylvania).
MOULEDOUX, E., B.A. (Tulane University), B.S.L.S. (Louisiana State), M.A. (Louisiana State).
SEENS, R. D., B.A. (Simon Fraser), M.A. (Victoria), Ph.D. (Victoria).
SHAMES, M. L., B.A. (University of Manitoba), M.A. (University of Manitoba), Ph.D. (University of Manitoba).
THORPE, S., Ph.D. (Brown University), (Part time).

SOCIOLOGY

Associate Professors

DEWEY, G., B.A. (Notre Dame), M.A. (Notre Dame), Ph.D. (Notre Dame). (Vice-Chairman).
TASCONE, J., B.A. M.A. (St. Bonaventure). (Chairman).

Assistant Professors

DRYSDALE, E. S., B.A. (Northland College, Ashland, Wisconsin), M.A. (Louisiana State University), Ph.D. (Louisiana State University).
HLOPHE, S., B.A. (Pius XII University College), M.A. (University of Alberta).
HORWICH, H., B.A. (Dalhousie University, Halifax), M.A. (Dalhousie).
TRESIERRA, J., B.A. (Catholic University, Lima, Peru), M.A. (Notre Dame).

Lecturers

HARMAN, W. R., B.A., M.A. (University of Missouri).
LIPSIG, C., B.A. (Bronders University), M.A. (Boston).
TARLO, J. M., B.A. (University of California), M.A. (Dalhousie University).

THEOLOGICAL STUDIES

Professors

HENKEY, Rev. C. H., B.C.L. (Gregorian), S.T.D. (Gregorian), Ph.D. (Gregorian).

Associate Professors

BEDARD, W., O.F.M., B.A. (Montreal), S.T.D. (Catholic University of America).
BREEN, Rev. R. W., B.A. (Montreal), B.Th., S.T.L. (Montreal), M.S. (Fordham), Ph.D. (Strasbourg), Dean of Arts.
HOFBECK, J., B.A. (Eichstate), C.C.E.S. (Paris, Sorbonne), S.T.L. (Institut Catholique, Paris), S.T.D. (Institut Catholique, Paris) (Chairman).
McEVENUE, S. E., B.A. (Montreal), L.Ph. (Montreal), M.A. (Halifax), S.T.L. (Montreal), S.S.L. (Rome), S.S.D. (Rome), Assistant to the Dean of Arts.
O'BRIEN, G., S.J., B.A. (Montreal), M.A. (St. Mary's, Halifax), S.T.L. (Regis, Toronto), S.T.D. (Woodstock).

RICHARDSON, G. P., B.Arch. (Toronto), B.D. (Knox College, Toronto), Ph.D. (Cambridge), Asst. to Academic Vice-President.
 WESOLOWSKY, S. O., B.A. (Montreal), M.A. (Princeton), Ph.D. (Princeton).

Assistant Professors

GARNET, P., B.A. (Sheffield), M.A. (Sheffield), Ph.D. (McGill).
 JONES, P. W., L.Ph. (Gregorian), S.T.L. (Gregorian University).
 MOROZIUK, P.R., B.A., M.A. (Ottawa), S.I.L. (Gregorian), S.I.D. (Pontifical Institute of Eastern Ecclesiastical Studies, Rome).
 PARIS, C. B., B.A. (S.C.K.), B.Th. (Laval), S.T.L. (Laval), Diplome I.S.P.C. (Paris), S.T.D. (Institut Catholique, Paris).
 SPICER, M., B.A. (Montreal), M.A. (Etudes Médiévales, Montreal), M.A. (McGill), Ph.D. (Ottawa).
 WEBSTER, A., B.A. (St. Thomas, Denver), M.A. (St. Thomas, Denver).

Resident Lecturer — Judaic Studies

ROME, D., B.A. (British Columbia), B.L.Sc. (McGill), M.A. (Université de Montréal).

Fine Arts

Acting Chairman: DEAN OF ARTS

Art (Co-ordinator: E. Wertheimer)

- 300Z A GENERAL INTRODUCTORY ART COURSE.** Full Course.
 Simplified methods in drawing, painting and sculpture; new techniques and materials will be exploited. This course will lead the student to a discovery of design, form and consciousness of colour. Adequate practice in draftsmanship and life drawing will be included along with a critical evaluation of the students' work and the work of others. A balance will be maintained between abstract and real art. Ample slides will be made to cover the period from the Impressionists to the present. Lectures: 3 hours per week for two terms.
- 310Z BASIC DRAWING.** Full Course.
 An introduction to the fundamentals of drawing taking the student through object, still life, landscape and life drawing. Emphasis will be placed on realistic representation of forms through the utilization of various drawing media; abstractions will also be explored. Students will be introduced to the historical development of drawing as an art form. Prerequisite: Art 300Z. Lectures: 3 hours per week for two terms.
- 320Z BASIC DESIGN.** Full Course.
 A course in pure design, wherein two dimensional and three dimensional projects are balanced against each other in direct relationship for the student to experience working with flat and actual space. Line, form, colour, collage, plaster, wire, tin, and cardboard will be some of the media used to express the design ideas. A consciousness of design and development of form will evolve from a simple graphic statement to an involved three dimensional structure. Prerequisite: Art 300Z. Lectures: 3 hours per week for two terms.
- 330Z DRAWING II.** Full Course.
 This course is a continuation of Art 310Z. A greater concentration will be placed on the more complex aspects of academic drawing, including composition, perspective indoor and outdoor drawing and working from the model. Prerequisite: Art 310Z. Lectures: 3 hours per week for two terms.
- 430Z EUROPEAN ART OF THE MIDDLE AGES.** Full Course.
 This course begins with the Early Christian Period and encompasses the different periods in Art and History including the Byzantine, Islamic, Romanesque, to Gothic Art. The Middle Ages: Byzantine Art (4th-15th c) — Constantinople, Rome, Ravenna. The Iconoclasts, the Golden Age, the Renaissance. Arts after the fall of Constantinople, influence of Byzantine Art in Eastern & Western Europe, architecture, mosaics, icons, miniatures, ivory, goldsmith work. Islamic Art: (7th-16th c) The Ommayades, the Fatimides in the south of Spain, Sicily, Istanbul — architecture, carpets, pottery, silverwork. Romanesque Art: (11th-13th c) Architecture, religious, military, secular in France, Rhineland, Spain, Italy, the Great Schools of Architecture: sculpture. Gothic Art: (13th-15th c) France, England, Flanders, Germany, Central and Eastern Europe, Spain, Portugal: architecture, stained glass, painting, miniatures, engraving, goldsmith. The Early and High Renaissance in Italy: (14-17th c) Renaissance in France, Flanders, Germany, Spain: architecture, sculpture, painting, furniture. Lectures: 3 hours per week for two terms.

Drama (see special supplement).

Music (not offered 1973-74)

Classics

Chairman: D. BROWN

The Department of Classics offers courses leading to the Bachelor of Arts and to the Honours Bachelor of Arts degrees in two different programmes. The programme in CLASSICAL PHILOLOGY, requiring linguistic competence in both Greek and Latin, emphasizes the aesthetic appreciation of the masterpieces of classical literature. The programme in CLASSICAL STUDIES, which does not require a knowledge of the languages, is directed toward broader considerations of societal problems arising from the "living past". The Department also has courses in HEBREW, ANCIENT HISTORY, and ARCHAEOLOGY. These last two are ordinarily taken by students registered in the Department of History and are cross-listed as history courses. It is understood, of course, that the requirements and regulations of the Department of History are then applicable.

Any course offered by the Classics Department may be taken by any qualified student as an ELECTIVE.

Provided all the general requirements for graduation are fulfilled, students registered in the Department of Classics, in either one of its two programmes, can qualify for the B.A. degree after successfully completing seven courses. The Honours degree is awarded to those students who will have completed nine courses in either programme with an over-all average of at least 65%. What specific courses a student takes is to be decided upon by the student himself together with the department chairman in consultation with the other members of the department.

All courses may be taken as honours courses. In some cases only students in an honours programme will be ordinarily permitted to register for a specific course in any given term; in other cases, i.e. whenever a course is open to all students, students in an honours programme will meet with the professor for tutorial sessions in addition to the regularly scheduled classes. All students registered for a programme in Classics must consult with the department chairman before registering for any course given in the department.

The Department of Classics, by arrangement with the Department of History, offers university-level courses in Ancient History and Archaeology. These courses may be taken as either Classics or History courses and are listed as course offerings by both Departments.

A seminar course in Ancient History for honours students in either Department is given each year on some specific period or problem in Ancient History. The subject matter is different each year.

The Archaeology course is intended primarily for honours students. Permission of the instructor is required before a student may register.

The Ancient World and Greek and Roman History are general courses open to all university-level students. Students in honours programmes desiring to take these courses must obtain the permission of the Chairman of the Department in which they are registered.

- 330Z GREEK AND ROMAN HISTORY. Full Course. L.J. Sanders
(Also listed as History 320 Z) A survey of Greek and Roman history from earliest times to the fall of the Roman Empire in the West, viewed primarily through the eyes of contemporaries, emphasizing those issues which have excited and continue to arouse interest and controversy among historians. While Athens for its unique cultural and political

achievement and Rome for its administrative genius and imperial successes, inevitably occupy the central interest, these cities will be examined from the viewpoint of their critics as well as admirers, and the credibility of the ancient evidence will be carefully assessed. Due attention will be directed towards social and economic as well as purely political factors and the course will be designed to demonstrate the extent to which the lower classes—peasants, soldiers, sailors, craftsmen and traders, contributed as much to the classical achievement as kings, emperors, and aristocrats. Lectures: 3 hours per week for two terms.

- 340Z THE ANCIENT WORLD. Full Course. B. Wardy
(Also listed as History 322Z) After a preliminary survey of Pre-History, a thorough study of the first civilizations, such as the different forms of development in Mesopotamia, Phoenicia, Ugarith, Canaan, Egypt during its various periods, Persia, India and China. Ancient sources will be used, whenever possible. Lectures: 3 hours per week for two terms.
- 430Z PROPAGANDA AND POLITICAL DECEPTION IN GREEK AND ROMAN HISTORY. Full Course. L.J. Sanders
An examination of the relationship between political ideas and practice with particular emphasis upon the slogans and false ideologies invented to justify war, peace and the implementation of political and constitutional programmes by both radical and reactionary elements. Though inevitably the chief sources discussed will be literary, due attention will also be directed towards the value of numismatic, epigraphic and artistic material as a means of winning over the mind of man. Prerequisite: Classics 450Z or 330Z. Lectures: 3 hours per week for two terms.
- 432Z JULIUS CAESAR AND ALEXANDER THE GREAT. Full Course. D. Brown
(Also listed as History 520Z) Three centuries separate them, perhaps history's greatest field marshalls, reformers, and visionaries, two men more than all others loved, despised, admired, and condemned by contemporaries and posterity alike. This course will seek to rediscover them as they were, the worlds they conquered, and what Alexander and Caesar wanted and planned their worlds to be. Seminar: 2 hours per week for two terms.
- 434Z AN INTRODUCTION TO ARCHAEOLOGY. Full Course. D. Brown
(Also listed as History 324Z) Archaeology as a science; its purpose, methods, and techniques. The relationship of Archaeology to Pre-History, Ancient History, Fine Arts, and Anthropology. While the course will deal principally with Classical Archaeology and Greek and Roman Art, the Archaeology of Africa, the Orient, and the Americas will also be considered. Lectures: 3 hours per week for two terms.

Courses in Classical Studies

- 321B THE COMIC ART. Half Course. E.M. Preston
An investigation into the evolution of comedy from our earliest literary sources to the present. The classical influence in later comic literature. Theories of comedy, ancient and modern. Reading material will be drawn mainly from Greek and Roman dramatic literature. Lectures: 3 hours per week, second term.
- 324Z THE GREEKS AND THE AFTERLIFE. Full Course. E.M. Preston
A study of magical ritual, mystic cults, myths, philosophies and literary conventions connected with the idea of immortality in the ancient world. Concepts of the Underworld with particular emphasis upon the Greeks, the background to these concepts in Egyptian belief, and their influence

and development in later Roman thought and practice. The theme of the course is the complementary role of the rational and irrational elements in the individual and society, and the pattern of action and reaction in the history of ideas created by the tension between these two elements. Readings translated from ancient texts will be used to illustrate the various stages in the growth and development of ideas on immortality. These literary sources will include the Egyptian Book of the Dead, Homer, Hesiod, Sophocles, Euripides, Plato, Lucretius and Vergil. Lectures: 3 hours per week for two terms.

- 373A CHINESE MYTHS. Half Course. B. Wardy
Their sources, development and analysis. The folktales and myths will be used as a means of understanding the ideas and sentiments of the ancient Chinese. Those myths were selected which are most representative of Chinese mythology, still live in the minds of the people and are referred to most frequently in their literature. Lectures: 3 hours per week, first term. (Note: This course may be taken by students engaged in the *Third World Studies Programme* as part of a Concentration in Chinese Studies.)

- 376Z MYTH AND MYTHMAKING. Full Course B. Wardy
An examination of the universal features of myth. Recurrent patterns of myth in primitive cultures (Asio-Indian, American-Indian, Insular Pacific, Celtic, etc.). Near Eastern Mythologies (Mesopotamia, Ugarit). Mythological remains in the Old Testament and post-biblical Jewish literature. Major classical myths on the origin of the gods, the feats of heroes and the adventures of mortals in Homer, Hesiod, the Greek Tragedians, the Platonic Dialogues, Ovid, and the Bible. Lectures: 3 hours per week for two terms.

- 384Z GREEK DRAMA: THEATRE AND DEMOCRACY IN FIFTH CENTURY ATHENS. Full Course E.M. Preston
Essentially a study of the literary and artistic merits of the tragedies of Aeschylus, Sophocles, and Euripides, and the comedies of Aristophanes. The ritual origins of drama, mythical sources, and the growth of the dramatic form. Greek theatre as an expression of the democratic movement and of the intellectual revolution that took place in fifth century Athens. Lectures: 3 hours per week for two terms.

- 386Z WOMEN IN CLASSICAL ANTIQUITY. Full Course. L.J. Sanders
An examination of the social status and political influence of woman in ancient Greece and Rome. Particular emphasis will be placed upon the apparent contradiction between the seemingly inferior position occupied by women in fifth century Athens and the general enlightenment which characterized the epoch. Within this context the influence of war upon the struggle for feminine emancipation, as seen through the eyes of tragedians, comic writers, philosophers and historians, will be considered. Roman women will be viewed with particular reference to the question: to what extent the essentially hostile scandelmongering of the sources is reflective of veracity of fact and of an essentially non liberal environment. Lectures: 3 hours per week for two terms.

Courses In Hebrew

- 360Z ELEMENTARY HEBREW. Full Course.
An introductory course in reading, writing and grammar for students with little or no knowledge of Hebrew. This course is designed not only for those interested in conversational Hebrew, but also for students in the department of Theology, who will be assisted in acquiring first a reading command of the language. Lectures: 3 hours per week for two terms.

- 460Z INTERMEDIATE HEBREW. Full Course.
Practice in Hebrew grammar and conversation. Readings from modern Hebrew authors. Lectures: 3 hours per week for two terms.

- 462Z INTRODUCTION TO BIBLICAL HEBREW. Full Course.
A study of classical Hebrew grammar. Accurate reading of selected prose passages of the Hebrew Bible. (Poetic selections may also be studied if the students so desire). Prerequisite: Hebrew 360Z presupposed. Lectures: 3 hours per week for two terms.

- 560Z INTRODUCTION TO MODERN HEBREW LITERATURE. Full Course.
The selection will consist of essays, stories, short novels and poetry. In addition, composition to develop the student's understanding of Hebrew grammar and style. Seminar: Twice a week.

Courses in Classical Philology

- 390Z ELEMENTARY LATIN. Full Course.
A course for those with little or no experience with Latin. Major emphasis will be placed on assisting the student in acquiring a reading command of the language. Open to all students but especially those interested in classical languages, history, philosophy and theology. Lectures: 3 hours per week for two terms.

- 490Z LATIN LITERATURE. Intermediate. Full Course.
Cicero's *Pro Archia*, selections from Catullus and the *Odes* of Horace. Prerequisite: Junior Matriculation Latin or its equivalent. Lectures: 3 hours per week for two terms.

- 492Z LATE LATIN. Full Course.
A study of selected texts from the works of patristic and medieval writers. This course is directed especially to students of history, philosophy and theology with at least a knowledge of elementary Latin. Lectures: 3 hours per week for two terms.

- 590Z LATIN LITERATURE. Advanced. Full Course.
Cicero's *Pro Lege Manilia*, and Books 2, 4 and 6 of the *Aeneid*. Prerequisite: Classics 490Z. Lectures: 3 hours per week for two terms.

- 350Z ELEMENTARY GREEK. Full Course.
A course for those with no previous knowledge of Greek. Major emphasis will be placed on assisting the student in acquiring a reading command of the language. This course is designed not only for those interested in classical literature but also for students in the departments of philosophy and theology. Lectures: 3 hours per week for two terms.

- 450Z INTERMEDIATE GREEK. Full Course.
Further work toward the acquisition of a reading command of the language. Plato's *Apology* and *Crito*. Prerequisite: Classics 350Z. Lectures: 3 hours per week for two terms.

- 550Z GREEK LITERATURE. Full Course.
Demosthenes' *Philippics* and Euripides' *Alcestis*. Prerequisite: Classics 450Z. Lectures: 3 hours per week for two terms.

- 552Z PLATO. THE REPUBLIC. Full Course.
Prerequisite: Classics 450Z. Lectures: 3 hours per week for two terms.

- 554Z HERODOTUS AND THE LYRIC POETS. Full Course.
Prerequisite: Classics 450Z. Lectures: 3 hours per week for two terms.
- 556Z HOMER. Full Course.
Extensive readings from the two epics in Greek; both works in their entirety in English. Prerequisite: Classics 450Z. Lectures: 3 hours per week for two terms.
- 558Z GREEK TRAGEDY. Full Course.
Aeschylus' *Agamemnon*, Sophocles' *Oedipus Rex*, Euripides' *Hippolytus*.
Prerequisite: Classics 450Z. Lectures: 3 hours per week for two terms.
- 592Z LUCRETIUS. Full Course.
A study of the philosophy and poetry of the *De rerum natura* of Lucretius. Readings in the original and in translation. Prerequisite: Classics 490Z. Lectures: 3 hours per week for two terms.
- 594Z LIVY AND TACITUS. Full Course.
Extensive readings from Livy, Books 21-30, and the *Annales* of Tacitus, with particular attention to the Latinity peculiar to each historian.
Prerequisite: Classics 490Z. Lectures: 3 hours per week for two terms.
- 596Z ROMAN COMEDY. Full Course. Prerequisite: Classics 490Z.
Lectures: 3 hours per week for two terms.
- 598Z ROMAN SATIRE. Full Course.
Prerequisite: Classics 490Z. Lectures: 3 hours per week for two terms.
- 612Z CICERO. Full Course.
Careful examination of selections from the oratorical and philosophical works. Prerequisite: Classics 490Z. Lectures: 3 hours per week for two terms.

Communication Arts

Chairman: JOHN E. O'BRIEN, S.J.

Administrative Assistant: D. Taddeo, Jr.

Courses leading to a B.A. with a Major in Communication Arts

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Comm. Arts 301A/B	Comm. Arts	Comm. Arts
Comm. Arts 303A/B	Comm. Arts	Comm. Arts
Comm. Arts 305A/B	Comm. Arts	Free Elective or Comm. Arts 580Z
Comm. Arts 307A/B	Elective	Elective
Comm. Arts 308Z	Elective	Elective
Elective		
Elective		

During University II and III, students majoring in Communication Arts normally take

- Two full credits from the Comm. Arts "Cultural" series
- Two full credits from the Comm. Arts "Style, Form and Content" series
- At least *One* full credit from the Comm. Arts "Production" series

Courses in the 300 series are restricted to first year Communication Arts majors.

Courses in the 400 series are ordinarily for Univ. II and III students.

Courses in the 500 series are ordinarily for Univ. III students.

Several of the 400-500 series courses offered by the Communication Arts Department are open to *all* University II and III students. It must be understood, however, that if enrollment in one of these courses is restricted, students majoring in Communication Arts will be given priority.

Department Objectives

The program attempts to strike a balance between the development of the creative potential and the critical faculty for each student. Ongoing studies in the humanities and social sciences are an integral part of this development.

Within the program itself, both in seminar rooms and laboratories, the primary concern is to investigate in depth the spiritual dimensions of "media man" and "media world", to understand more fully the role of media in society, to examine critically the goals of society as projected in media, and to assess realistically the responsibilities of media vis-a-vis that society. To this end, students are encouraged to develop a personal artistic and ethical statement on the quality of life and the goals of society.

On the creative side, the emphasis initially is on the acquiring of skills and an understanding of basic technology. This is followed by a concentration on artistic styles in media (film, television, theatre, sound) and on the content of a work of art in a particular medium.

The curriculum is designed:

- for students who intend to continue graduate studies in communication;
- for future writers, critics, communication arts consultants, directors, and performers;

3. for future teachers in the field of radio, television, film, theatre;
4. for students who plan a career in the areas of publicity, promotion, advertising and public relations.

FACILITIES:

The department has one professionally-equipped television-film studio, 3 Plumbicon cameras, telecine chain, 2" — 1" — 1/2" videotape recorders and editing facilities, portable TV cameras, several 16mm professional units, 16mm sync and editing units, and complete super 8mm sound/film units; a photographic laboratory and negative room, an optical laboratory, a holographic and laser laboratory and a sound laboratory; a research studio for the measurement of visual and audio information loads, an electronic and electromechanical programmer for multi-media use, and a learning centre with audio-video terminals.

DEPARTMENT ADMISSION REQUIREMENTS:

- A) *Bachelor of Arts degree*: The normal requirement for students residing in Quebec is the completion of the CEGEP program (D.E.C.); for students residing outside Quebec, the equivalent is the completion of 13 years of schooling. In addition, applicants must submit the following to the Department of Communication Arts:
- (1) evidence of strong academic standing and one or more examples of academic work, for example, term papers, research projects, etc. . .
 - (2) indication of creativity and one or more samples of personal work, for example, script treatments, films, tapes, paintings, sculpture, handicrafts, etc. . .
 - (3) a comprehensive *letter of intention* expressing why the applicant wishes to major in Communication Arts. This letter plays a major role in the decision to either accept or reject the applicant.
- B) *Post B.A. Diploma in Communication Arts*: Each year, a number of post B.A. students are accepted for this comprehensive program in Communication Arts. The student is required to take seven full courses in Communication Arts, five during the regular academic year and two in the summer session preceding or following the academic year. Of the seven, two are production courses (one in the winter and the other in the summer); the remaining five courses should follow the pattern established for undergraduate study in "Culture" and "Style, Form and Content".

A diploma is awarded upon completion of the program. Applicants must follow the procedures outlined for undergraduate applicants.

The deadline for submission of materials and completed application forms is *March 15th for Post B.A. applicants*, and *May 1st, for undergraduate majors*. The above should be sent to:

Admissions Committee
Department of Communication Arts
Loyola of Montreal
Montreal 262, Quebec.

INTRODUCTORY COURSES

- 301
A/B HISTORY OF COMMUNICATION MEDIA. Half Course. M. Malik
Selected segments from the history of film, radio, television, drama, journalism, and design, related to the contemporary philosophy of communication arts. Explanation and demonstration of major styles, art work, authors. Prerequisite: Comm. Arts Majors. Learning Centre: 2 hours per week, first or second term.
- 303
A/B COMMUNICATION ANALYSIS. Half Course. M. Malik
General and detailed analysis of various information complexes, e.g. exhibitions, theatres, cinema performances, museums, galleries, countryside, city streets, highways, department stores, etc. — from the point of the information aids used to influence the perception of visitors — light, space, sound, pictures, words, and exhibits. Prerequisite: Comm. Arts Majors. Projects: 2 hours per week, first or second term.
- 305
A/B DYNAMICS OF VISUAL REPRESENTATION. Half Course. D. Diniacopoulos
The objective of this laboratory course is to train students to perform basic experiments in vision and perception — to explore space, distances, planes, tones, light, etc. From the experiments the students are led to discover fundamental laws which underlie visual representation. Photography (and its techniques) is the medium by which these experiments are recorded for observation and discussion. Prerequisite: Comm. Arts Majors. Lectures: 3 hours per week, first or second term. Lab: 3 hours per week, first or second term. \$50.00 charge for course materials. (Note: All Communication Arts University I students are advised to consider Physics 315A, Physics 317B, Chemistry 315A, and Chemistry 317B as electives in conjunction with this course.)
- 307
A/B INTRODUCTION TO AUDIO-VISUAL MEDIA TECHNOLOGY. Half Course. A. Mirabelli
Basic instruction in the technology of picture and sound, basic operational practices; basic physics, electricity, acoustics and electronics, related to equipment: cameras, projectors, tape and video-tape recorders, T.V. and film studios. Basic optics and basic photo-chemistry. Prerequisite: Comm. Arts Majors. Lectures-Lab: 4 hours per week, first or second term.
- 308Z THE CINEMATIC AND THE ELECTRONIC IMAGE. Full Course. C. J. Fischer, S. J., D. Murphy, G. Valaskakis
A practical approach to an understanding of the common elements of film and video media, and of the specific differences inherent in their effective use. Students develop treatments and scripts for course productions. Prerequisite: Comm. Arts Majors. Lectures: 2 hours per week average. Lab: 4 hours per week average.

CULTURE SERIES

- 420Z MEDIA AND MEDIA-CULTURE. Full Course. J. Buell
This course is about media and their function, overt and covert: their effect on perception: as bases for thought, organization, technologies: as determinants of content; as accelerators of cultural changes; oral-aural, manuscript, print, electronic cultures; current cultural dynamics. The method is lecture-discussion and projects. Assignments are more or less monthly. Prerequisite: Open to all University II and III students. Lectures: 3 hours per week for two terms. Text: Books are the works of Marshall McLuhan, and a list of allied works currently available.

- 421A **MASS COMMUNICATION.** Half Course.
The focus of this course will be on the nature of communication as a social process, the relative influence and effect of person-to-person and mass media-to-person communication in relation to attitude formation and change, behaviour, values and society in general. Particular emphasis is placed on the capacity of mass media to generate social action under varying social conditions. Recent empirical studies are examined. Prerequisite: Open to all University II and III students. Lectures: 3 hours per week, first term. Text: DeFleur, *Theories of Mass Communication*; N. Johnson, *How to Talk back to your Television Set*; Fred Friendly, *Due to Circumstances beyond our Control*; Braden & Pennybacker, *Broadcasting and the Public Interest*.
- 422Z **CROSS-CULTURAL COMMUNICATION.** Full Course. G. Valaskakis
Do the values of a person or a society influence the processes and products of communication? What are the effects of specific values on inter-personal, intergroup and mediated communication? What problems arise in communicating, both personally and with media, across cultures? The course will focus on these and other questions related to communication in a cross-cultural context. Specific problems in Canadian cross-cultural communication will be examined, including French-English communication and communication with ethnic minorities such as Black and Native Canadians. Prerequisite: Open to all students in University II and III. Lectures: 3 hours per week, lecture and discussion. Readings: Texts by Aranguren, Goffman, Hall, Irving, Laing, plus xeroxed readings.
- 423B **PSYCHOLOGY OF COMMUNICATION.** Half Course.
The course is focused on the development of language and use of language as a means of communication and the development of language as a symbolic system. Self-communication and inter-personal communication are the major areas to be considered. Prerequisite: Open to all University II and III students. Lectures: 3 hours per week, second term.
- 522Z **SEMINAR IN MEDIA AND SOCIETY.** Full Course.
(Not Offered in 1973-74).
- 524Z **FEATURE TELEVISION.** Full Course. J. E. O'Brien, S.J.
(Not Offered in 1973-74). Survey of styles and forms in the feature television program, with emphasis on television opera, ballet, drama, musical, variety, and quiz. Examples drawn from TV programs in Canada, U.S.A., Europe. Prerequisite: Open to University III students.
- 525A **DOCUMENTARY FILM AND TELEVISION GENRES.** Half Course. M. Malik
(Not Offered in 1973-74). Survey of genres in documentary film and television as: biographical, industrial, travelogue, nature scientific, training, education, children's film and TV programs. Examples from Canada, U.S.A., Europe. Prerequisite: Comm. Arts 443A, 443B, or approval of instructor. Text: Jacobson, *Documentary Traditions*.
- 527 **FILM IDEAS.** Half Course. M. Gervais, S.J.
A/B A seminar in film criticism, the course focuses on the aesthetic cultural dimension, exploring the student's sensibility within the context of contemporary sensibility. Viewing, discussion, written critiques of present trend-setting films. Prerequisite: Comm. Arts University III. Lectures: 3 hours per week, first term or second term. Readings: To be assigned.
- 528Z **BROADCASTING POLICY IN CANADA.** Full Course. A. Mirabelli
A course designed to prepare students for the regulatory and legal constraints facing Canadian broadcasters, and to put them into an

historical and political context. The course will cover the current Broadcasting Act, the CRTC, the CBC, private broadcasters, lobbies, the history of broadcasting in Canada, and future technical and political trends. The course will be given seminar style and final marks will reflect the student's participation in the class discussions. Prerequisite: Open to all University III students. Lectures: 3 hours per week for two terms. Text: *Senate Report on Mass Media*, Vol I (Information Canada 1970).

STYLE, FORM AND CONTENT SERIES

- 440Z **ADVANCED SCRIPT-WRITING: THE SCREENPLAY FOR FILM AND TELEVISION.** Full Course. J. Buell
A practical course in writing film-drama: story construction and plotting, scene-making, characterization and character development, dialogue, dramatic continuity, timing, pacing, rhythm, suspense, and creative criticality. Many of these fictional and dramatic techniques will as the occasion arises be applied to non-fictional scripts as well. The method is lecture, discussion, demonstration, critique. Assignments are continual and on-going. Prerequisite: Approval of Instructor. Lectures: 3 hours per week for two terms. Text: Books, reference texts and research as need dictates.
- 441A **SEMINAR IN PROPAGANDA.** Half Course. D. Murphy
The aim of the course is to recognize the orchestration of the elements of propaganda around us and to develop the means to deal with it. The method followed will be discussion and presentation of research findings by teams of 2-4 students. Prerequisite: Open to all University II and III students. Lectures: 3 hours per week, plus tutorial sessions, first term. Text: *Brave New World Revisited*, A. Huxley; *"To Do is to Know,"* Gov. of Canada documents; *How to Talk Back to your Television Set*, N. Johnson; *The Selling of the President*, J. McGinnis; *To Know and Be Known*, Gov. of Canada documents; *Don't Blame the People*, R. Cirino.
- 442Z **INDEPENDANT STUDIES PROGRAMME.** Full Course. Staff
- 443A **DOCUMENTARY FILM.** Half Course. M. Malik
A survey of the documentary film field from 1895 until 1960, with an examination of major styles: Romantic, Realistic, Impressionistic, Expressionistic, Avant-Garde. The styles will be examined in the works of R. Flaherty, J. Grierson, F. Capra, B. Wright, J. Ivens, A. Cavalcanti, W. Ruttmann. Prerequisite: Open to all University II and III students for screenings; restricted to Comm. Arts Majors for learning centre studies. Lectures: Screening session every second week for one term. Learning Centre studies every other week, first term. Text: W. Bluem: *Documentary Film and Television*.
- 443B **DOCUMENTARY TELEVISION.** Half Course. M. Malik
Survey of styles and forms in documentary television. Examples of major television documentary programs from Canada, U.S.A., Europe. Prerequisite: Open to all University II and III students for screenings; restricted to Comm. Arts Majors for Learning Centre studies. Lectures: Screening sessions every second week. Learning Centre studies every other week, second term. Text: W. Bleum: *Documentary in American Television*.
- 445-00 **EXPLORATIONS IN THE CINEMA** (Introduction to the following nine units.) Full or Half Course. M. Gervais, S.J.
In-depth study of specific artists or schools in film creativity. Concentration on the (film) art-object in its technique and overall

aesthetic dimensions, to arrive at the artist's vision of the universe and his insights in terms of an evolving film form and evolving human sensibility. The specific cultural context within which the artist evolves is also explored. Each of the following units is a half-term course. Units are given on a cyclic basis. Prerequisite: Open to all students in University II and III. Lecture/Discussion: 4 hours per week — One term.

445A-01 CHAPLIN, THE COMICS, GRIFFITH, AND STROHEIM. Half Course. M. Gervais, S.J.
The rise of American film art; the comic spirit; Charles Chaplin over the years. First term.

445-02 LANG, MURNAU, PABST. Half Course.
(Not Offered in 1973-74)

445-03 EISENSTEIN, PUDOVKIN, DOVZENKO. Half Course
(Not Offered in 1973-74)

445-04 THE HOLLYWOOD GENRES. Half Course.
(Not Offered in 1973-74)
(A) The Musical-Busby Berkeley, Astaire, Kelly, the Western, The Gangster. (B) Social Protest, Comedies — the Zanies and the sophisticates, the Blockbusters.

445A-05 THE GANGSTER FILM — ORSON WELLS. Half Course. M. Gervais, S.J.
First Term.

445-06 RENOIR, CLAIR, COCTEAU. Half Course.
(Not Offered in 1973-74)

445-07 TRUFFAUT, GODARD, CHABROL, RESNAIS. Half Course
(Not Offered in 1973-74)
The "Nouvelle Vague" and the later evolution of its proponents.

445B-08 BERGMAN AND THE SWEDES. Half Course. M. Gervais, S.J.
Second term.

445-09 FELLINI, ANTONIONI, THE ITALIANS. Half Course.
(Not Offered in 1973-74).

447B THE CANADIAN CINEMA. Half Course. M. Gervais, S.J.
A study of the history, the major figures and areas of Canadian cinema, for example, Cinema Quebecois. The films will be studied from various points of view, for example, aesthetic, economic, cultural. The course will be conducted in collaboration with Canadian film directors, critics and producers. Prerequisite: Open to University II and III students. Lecture/Discussion: 4 hours per week, second term.

449Y COMMUNICATION RESEARCH. Half Course. M. Malik
An examination of the aids and practical research methods for information chains. Limited experiments will be conducted on information complexes, e.g. 3D complexes, cinema, photography, holography, painted pictures, matacomplexes, and internal information spaces. Individual and group projects will be assigned. Prerequisite: Comm. Arts 303 A/B: Communication Analysis. Lectures: Tutorials-individual projects, given over two terms. Text: Taylor: *Communication Research*.

540Z COMMUNICATION MEDIA: USE-PERFORMANCE-RHETORICS. Full Course. J. Buell (Not Offered in 1973-74)

This course explores the form, range, limits, and uses of the major communicational media: the live voice, writing, audio-tape, radio, photo., film, and television. From the viewpoint of the performer or user or maker, it seeks to arrive at the "rhetorics" of each medium in varying contexts and circumstances. The method is continuing lab-projects and discussion-lectures. Prerequisite: Comm. Arts 420Z and approval of Instructor. Lectures-Lab: 4 hours per week for two terms. Text: Books-reference texts and research as need arises.

541B SEMINAR IN MEDIA FORECAST. Half Course. D. Murphy
This course examines trends in film, sound and television for upcoming media applications. The course includes theory of media effects. Industries and government will be invited to discuss future trends in media utilization. The course demands a theoretical model for original or novel use of a medium or mixed media. Prerequisite: Comm. Arts University III. Lectures: 3 hours per week, second term.

543Y COMMUNICATION PROGRAMMING. Half Course. M. Malik
An advanced seminar for students interested primarily in Communication Theory and Research. Individual projects will be assigned on the analysis of receiver responses, the design of programmes, the realization of pilot programmes and the evaluation of measurement of the efficiency of these programmes. Prerequisite: Comm. Arts 303 A/B, 449Y. Lectures: Tutorials and individual student projects, given over two terms.

544Z ADVERTISING AND PUBLIC RELATIONS. Full Course.
A probe of advertising and public relations designed to increase understanding of principles and strategies. The seminar will examine the role of clients, agencies, media and audiences. Students create and produce advertising and public relations material for a variety of media. At the same time they participate in goal setting, research and problem solving. The seminar examines social, moral, and economic aspects of present day strategies. Prerequisite: Open to all University III students. Lectures: 3 hours per week for two terms.

PRODUCTION SERIES.

460Z PHOTOGRAPHY AS VISUAL LANGUAGE. Full Course. C. Gagnon
In this age of mass media, the photographer must be a man of responsibility as well as vision. It has been said that one sees through one's eyes not with them and this implies that perception, intuition, and intellect must become one. The responsibility of the picture-maker, picture-taker, and picture-user is not to distort a truth but to reinforce it. The course will explore areas of personal concern as interpreted with single and serial images. Weekly projects will be assigned. Prerequisite: Open to all University II and III students and approval of Instructor. Prior submission of portfolio required and students accepted must own camera and lenses. Lectures-Lab: 3 hours per week for two terms. \$50.00 charge for course materials. (not offered in 1973-74).

462Z COMMUNICATION OF IDEAS THROUGH THE USE OF SOUND. Full Course. A. Mirabelli
This course is designed to give students a full basic working knowledge of the technology and discipline of audio production as applied to radio, film, television, and audio-visual productions. Based on a verbal exchange of creative ideas, students will prepare individual sound projects, under tutorial guidance, in their own area of preference, ranging from simple to

more complicated formats. Discussions are based on analysis of (a) student's experiments in communicating with sound and (b) works from the commercial world of media. Prerequisite: Comm. Arts 307A/B and 308Z. Lectures: 3 hours per week. Lab: Minimum of 2 hours per week. Tutorials: 1 hour per week. Text: Reference material — Vanier Library.

464Z INTERMEDIATE FILM PRODUCTION. Full Course.C.J. Fischer, S.J.,C. Gagnon
Three short productions progressively acquaint students with equipment and procedures, and give an opportunity to explore a variety of film genres and styles. The fourth, normally a team production, provides more substantial scope for original and creative communication by the film medium. Prerequisite: Above-average standing in Comm. Arts 308Z, and Comm. Arts 443A is recommended as a concurrent course. Lectures: 6 hours per week average.

468Z INTERMEDIATE TELEVISION PRODUCTION. Full Course.J.E. O'Brien, S.J., D. Murphy
This course explores the creative possibilities inherent in the television medium, the uses of the telecine chains and rear-screen projection, in-studio and on-location production and editing. The better original works of students are videotaped for playback and discussion. Criticism of program series with emphasis on research and criteria for judgement (content analysis, program value, relation to public arts). Prerequisite: Comm. Arts 308Z. Lecture-Lab: Minimum 6 hours per week. Text: Zettl, *Television Production Handbook* and Millerson, *Television*.

561Y COMPUTER COMMUNICATION PROGRAMMING. Half Course.
Digital computer applications to media — film, radio, television-complexes. Students work at samples of digital analog programs, applicable for electronic generation of sound, video and graphics. Prerequisite: Open to University III Comm. Arts Majors, specializing in Communication Programming. Lectures: 3 hours per week, given over two terms, plus extended projects.

580Z SENIOR PROJECT IN RESEARCH, FILM, TELEVISION, SOUND, OR MULTI-MEDIA. Full Course. Staff
Towards the end of second year, students of demonstrated scholarly and creative ability may propose, or be selected for, a major research or production project in a Communications area of special interest. During third year, individually or in teams and in close collaboration with faculty directors, these students produce works acceptable for publication, public distribution or professional use. Projects normally emphasize a thematic approach, and require approval by a Senior Projects Committee. Prerequisite: Comm. Arts University III. Lectures-Labs: Approximately 6 hours per week.

Economics

ECONOMICS

Chairman: S.A. Alvi

Courses Leading to a B.A. In Economics

FIRST YEAR	SECOND YEAR	THIRD YEAR
HONOURS		
Economics 309A/B & 311A/B	Economics 404Z	Economics — 600 level
Economics 322Z	Economics — 600 level	Economics — 600 level
Elective	Economics	Economics
Elective	Elective	Elective
Elective	Elective	Elective

Admission into the Honours Programme requires approval of the Department.

MAJOR		
Economics 309A/B & 311A/B	Economics 404Z	Economics
Economics	Economics	Economics
Elective	Economics	Elective
Elective	Elective	Elective
Elective	Elective	Elective

JOINT MAJOR		
Economics 309A/B & 311A/B	Economics	Economics
Economics or O.D.*	O.D.* Course	Economics
O.D.* Course	Elective	O.D.* Course
Elective	Elective	O.D.* Course
Elective	Elective	Elective

*O.D. refers to the discipline other than Economics. The courses — required or elective — in both Economics and the Other Discipline will be determined in consultation with the departments involved.

This programme consists of nine courses in the two departments concerned.

Joint Major programmes with Computer Science, Modern Languages, and Political Science are already operative. Joint Majors with other departments may be arranged.

Area of Concentration

A programme with Economics as the Area of Concentration consists of Economics 309A/B & 311A/B and four other Economics electives.

Economics 200Z or Economics 300Z is the prerequisite for all other Economics courses, except Economics 304Z. Additional prerequisites are indicated below each course. Alternative prerequisites in Economics or other disciplines may be approved by the Department.

Economics 302Z is a Principles of Economics course especially designed for the first year University students who are *not* registered in the Economics Department or the Commerce Faculty. Any students with Economics 302Z who wish to take other Economics courses may be required to do additional work.

300Z PRINCIPLES OF ECONOMICS. Full Course. Staff
A survey of the existing economic order, with particular emphasis on the

Canadian Economy. Concentration is on explaining the operation of the price system as it regulates production, distribution and consumption, and as it in turn is modified and influenced by private organization and government policy. Consideration is also given to the determination of aggregate economic activity; the monetary and banking systems in the United States and Canada; the composition and fluctuations of national income; the major conditions of economic growth, all as influenced by monetary, fiscal and other policies. Lectures: 3 hours per week for two terms. (Note: This course is not available to students who have received credit for Economics 200Z.)

- 302Z PRINCIPLES OF ECONOMICS. Full Course. Staff
This course is for students not majoring in Economics and its main contents are the same as for Economics 300Z. The difference is that in this course there is greater emphasis on Canadian Economic and Government Policies. Lectures: 3 hours per week for two terms. (Note: Students with Economics 302Z, wishing to go into the Economics Programme may be required to do additional work.)
- 304Z ECONOMIC HISTORY. Full Course. B. Wright
An analysis of the economic development of western Europe, Canada and the United States. Lectures: 3 hours per week for two terms.
- 307B CHINESE ECONOMY. Half Course. Z.R. Liu
This course is designed to examine the Chinese Economic Development since 1949. To evaluate its system and performance from the view-point of economic efficiency, the topics which will be discussed include: The Chinese Strategy for Development; Agricultural Organization; Policy and its Contribution to Economic Growth; Development of the Industrial Sector; The Control and Allocation of Resources and National Economic Planning. Lectures: 3 hours per week, second term.
- 309 A/B INTERMEDIATE MICRO-ECONOMIC THEORY. Half Course Z.R. Liu
In this course consideration will be given to such topics as: Theory and Measurement of Demand; Production Functions; Cost Analysis; Price and Output Policy under various market conditions; Factor Pricing; General Equilibrium; and the Social Welfare Optimum. Prerequisite: Economics 300Z. Lectures: 3 hours per week, given in both terms.
- 311 A/B INTERMEDIATE MACRO-ECONOMIC THEORY. Half Course. A. Takahashi
An analysis of the major areas of Aggregate Economics. The definition and measurement of National Income; the Theory of Income Determination; Monetary Theory; Growth and Fluctuation; Policy Implications. Prerequisite: Economics 300Z. Lectures: 3 hours per week, given in both terms.
- 322Z MATHEMATICS FOR ECONOMISTS. Full Course. Z.R. Liu
An introductory application of mathematics to economic analysis. Topical analytic Geometry; Differential and Integral Calculus; Differential and Difference Equations; Elements of Linear Algebra. Selected topics of economic application will be covered throughout the course. Prerequisite: Mathematics 101Z or equivalent. Lectures: 3 hours per week for two terms.
- 338Z CONTEMPORARY ECONOMIC ISSUES. Full Course. F.J. Hayes
An analysis of some economic issues facing Canada; Unemployment and inflation; Monopoly; Mergers; Foreign Ownership and Control; Income Distribution; Social Welfare; the Impact of U.S. Economy. Theoretical concepts will be developed as needed. Prerequisite: Economics 300Z. Lectures: 3 hours per week for two terms.

- 401A THEORIES OF ECONOMIC GROWTH. Half Course.
(Not Offered in 1973/74).
- 403B PLANNING FOR ECONOMIC GROWTH. Half Course.
(Not Offered in 1973/74).
- 404Z STATISTICAL METHODS. Full Course. A. Takahashi
The application of statistical methods to economic problems, including probability, testing hypotheses, time series, correlation and linear analysis. Prerequisite: Economics 309 A/B, or permission of professor. Lectures: 3 hours per week for two terms. Text: T. Yamane *Statistics & Problems to Accompany Statistics*.
- 405B ECONOMIC FLUCTUATIONS. Half Course.
(Not Offered in 1973/74).
- 407A MONEY AND BANKING. Half Course. B. Wright
The functions of money; money and prices; the evolution and kinds of money; the value of money; the supply of money; monetary and banking developments in Canada; monetary theory; international monetary system; monetary policy. Prerequisite: Economics 311 A/B. Lectures: 3 hours per week, first term.
- 409B ECONOMICS OF NATURAL RESOURCES. Half Course.
(Not Offered in 1973/74).
- 411A ECONOMICS OF TRANSPORTATION & COMMUNICATIONS. Half Course.
(Not Offered in 1973/74).
- 434Z COMPARATIVE ECONOMIC SYSTEMS. Full Course.
(Not Offered in 1973/74).
- 438Z LABOUR ECONOMICS. Full Course.
(Not Offered in 1973/74).
- 448Z INDUSTRIAL RELATIONS. Full Course.
(Not Offered in 1973/74).
- 504Z ECONOMIC DEVELOPMENT OF CANADA. Full Course.
(Not Offered in 1973/74).
- 507A INTERNATIONAL TRADE. Half Course. A. Lallier
The basis of International Trade, gains from trade, factor-price equalization, the tariff, Canadian commercial policy, trade and development, economic integration. Prerequisite: Economics 309 A/B; 311 A/B, or permission of professor. Lectures: 3 hours per week, first term.
- 509B INTERNATIONAL FINANCE. Half Course. A. Lallier
International monetary economics, foreign exchange markets, adjustment mechanisms, capital flows, balance of payments and domestic policy goals, international liquidity. Prerequisite: Economics 507A, or permission of professor. Lectures: 3 hours per week, second term.
- 535B PUBLIC FINANCE. Half Course. B. Wright
The expenditure and revenues of government; the role of government; equity and efficiency; the nature and costs of publicly-provided goods and services; the budget; public debt, federal — provincial — local government

fiscal relations. Prerequisite: Economics 300Z. Lectures: 3 hours per week, second term.

- 537A **CANADIAN ECONOMIC POLICY.** Half Course. F.J. Hayes
An analysis of the nature of economic problems and the method of economic analysis. Attention will be given to a few selected topics, such as: Monetary Policy; Fiscal Policy; Urban Development; Housing; Environmental Problems; Transportation, etc. Both Micro and Macro topics will be included. Implications for current academic policy will be a continuing theme. Prerequisite: Economics 309 A/B; 311 A/B. Lectures: 3 hours per week, first term.
- 539B **ECONOMICS OF SOCIAL WELFARE.** Half Course. F.J. Hayes
How government and other bodies attempt to reshape the economic growth and environment in greater conformity with social values. Topics include: inequality, poverty, social insurance, social assistance, medicare, education, employment opportunity, housing and urban development. Prerequisite: Economics 309 A/B; 311 A/B. Lectures: 3 hours per week, second term.
- 541B **REGIONAL ECONOMICS.** Half Course.
(Not Offered in 1973/74).
- 545A **STRUCTURE OF THE ECONOMY AND PUBLIC POLICY.** Half Course.
(Not Offered in 1973/74).
- 563B **ECONOMICS IN SOCIALISM.** Half Course.
(Not Offered in 1973/74).
- 565A **OPERATIONS ANALYSIS.** Half Course.
(Not Offered in 1973/74).
- 611A **WELFARE ECONOMICS.** Half Course.
(Not Offered in 1973/74).
- 655B **ADVANCED STATISTICAL METHODS.** Half Course.
(Not Offered in 1973/74).
- 662Z **HISTORY OF ECONOMIC THOUGHT.** Full Course. A. Lallier
An analysis and critical review of the evolution of economic thought from Plato and Aristotle to post-Keynesian economics. Prerequisite: Economics 309 A/B; 311 A/B. Lectures: 3 hours per week, two terms.
- 665A **ADVANCED MICRO-ECONOMIC ANALYSIS.** Half Course. Z.R. Liu
Mathematical exposition of the theory of consumer behaviour and demand; theory of production and cost; theory of the firm and market organization theory of distribution. Prerequisite: Economics 309 A/B and 322Z. Lectures: 3 hours per week, first term.
- 667A **ADVANCED MONETARY AND INCOME THEORY.** Half Course.
(Not Offered in 1973/74).
- 681B **ADVANCED MACRO-ECONOMIC ANALYSIS.** Half Course. A. Takahashi
A critical examination of selected topics in aggregative economics analysis. Topics will include: The Classical Macro-economics; the Keynesian Model of Income Determination; Theories of Investment and Inflation; Theories of Economic Growth; the Roles of Monetary and Fiscal Policies. Prerequisite: Economics 311A/B. Lectures: 3 hours per week, second term.
- 691Y **HONOURS THESIS.** Half Course. Staff
An Honours thesis will include independent reading and research under the supervision of a professor. The thesis will be equal to a half course credit. Both terms.

English

Chairman: J. Herz

Courses leading to an Honours B.A. in English

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
English (3 half or 1 full and 1 half)	English	English
from 400Z, 401A, 403A, 403B, 404Z, 405B, 407B, 406Z	English	English
English	Elective	Elective
English	Elective	Elective
Elective		
Elective		

The Honours program in English will have two formats, one to be called "Standard Honours", the other to be called "Elective Honours". Students in Honours English will take nine courses, 3 in each full year of study.

Standard Honours Program:

This program is recommended especially for students who plan to enter graduate school. It outlines a broad, historical coverage of periods and genres.

- 1½ Genre (three half courses or 1 full and 1 half course chosen from 400Z, 401A, 403A, 403B, 404Z, 405B, 406Z, 407B).
- 1 Shakespeare (chosen from 418Z, 420Z, 421A, 423B).
- 1½ pre-17th Century (chosen from 408Z, 410Z, 409A, 411B, 412Z, 413A, 415B, 417B, 424Z).
- 1½ 17th and 18th centuries (at least a half course in either period chosen from 417B, 424Z, 425A, 427B, 429A, 431B, 433A, 435B).
- 1 19th century (chosen from 436Z, 437A, 439B, 441A, 443B, 442Z, 444Z).
- 1 American, Canadian, 20th century (chosen from 446Z, 445A, 447B, 449A, 451A, 452Z, 454Z).
- 1½ Electives from Honours or Majors, or general Arts offerings, or from approved interdisciplinary and related studies.

Elective Honours Program:

This program assures an adequate foundation in English Literature, but it is particularly directed to students who wish to take a concentration of courses in areas of special interest to them. Honours students may take this program by explaining their special interests to an adviser during their first year who will approve their taking this program and counsel them.

- 4 Courses in pre-20th century English literature, distributed into four centuries. A course in Shakespeare may not count as a century course.
- 5 Electives from Honours or Majors or general Arts offerings, including up to two from approved interdisciplinary or related studies.

Courses leading to a B.A. with a Major in English

Majors Program:

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
English (3 half or 1 full and 1 half course from 400Z, 401A, 403A, 403B, 404Z, 405B, 406Z, 407B)	English	English
English	English	English
English	Elective	Elective
Elective	Elective	Elective
Elective	Elective	Elective

Students who are in the Majors program in English will take seven courses, three in their first year, two in each of the following years.

- 1½ Genre (three half courses or 1 full and one half course chosen from 400Z, 401A, 403 A/B, 404Z, 405B, 406Z, 407B).
 1 Shakespeare (chosen from 418Z, 420Z, 421A, 423B).
 2 pre-19th Century courses in two different centuries (chosen from list of Honours and Majors courses).
 2½ Electives from Honours or Majors or General Arts offerings.

Joint Programs

Joint Honours in English and History

A total of 12 courses are required, i.e.

English: 5 courses including 3 full courses in three different periods (at least two of which should be supported by courses in the History Department bearing some special relationship to them), 1 Shakespeare, and 1 Elective.

History: 5 courses including the 2 which would parallel English courses described above, and 2 which would be Honours Seminars, and 1 Elective.

Joint Tutorial (590)
 1 course

Elective in Either Department
 1 course

Joint Majors in English and History

A total of 9 courses are required, i.e. *English:* 4 courses; *History:* 4 courses. The 9th course is to be selected in consultation with faculty advisors.

As in the honours program, the core of the major should be two courses in one Department supported by two courses in the other, bearing a special relationship to them.

Joint Major in English and Modern Languages: 9 courses (4 in one modern language; 4 in English: 1 Shakespeare, 2 English periods, 1 elective; 1 free elective).

Joint Honours in English and Modern Languages: 12 courses (5 in one Modern Language; 5 in English: 1 Shakespeare, 3 periods parallel to modern language courses, 1 elective; 1 Joint Tutorial (592Z); and 1 free elective).

Courses for General Arts Students

STUDENTS MAY TAKE HALF OF A FULL COURSE FOR HALF COURSE CREDIT IF A SATISFACTORY ARRANGEMENT CAN BE WORKED OUT WITH THE PROFESSOR.

Electives for Honours and Majors

- 300Z CRITICAL READING. Full Course.
 (Not Offered in 1973-74). (Refer to Evening Division Calendar, 1973-74).
 The aim of this course will be, through the examination of various kinds of discourse, to encourage and develop in students the ability to read critically.

- 301 STYLE IN WRITING. Half Course. H. Hill
 A/B Designed for the student who can spell and construct sentences, but would like assistance in matters of structure, emphasis, fluency, diction and logic. Lectures: 3 hours per week, first or second term.

- 303A MAJOR DEVELOPMENTS IN ENGLISH LITERATURE. Half Course.
 (Not Offered in 1973-74).
 This course will work toward a better understanding of important artistic and intellectual developments from the Middle Ages to the end of the seventeenth century through a close study of some major, but not simply "typical", literary works. The course will be designed to be of help both to English majors desiring a background and framework for their period courses and to general arts students desiring to broaden their familiarity with literature. Lectures: 3 hours per week, first term.

- 305B MAJOR DEVELOPMENTS IN ENGLISH LITERATURE. Half Course.
 (Not Offered in 1973-74).
 As above, concentrating on the eighteenth, nineteenth, and twentieth centuries. Lectures: 3 hours per week, second term.

- 304Z COMEDY. Full Course.
 (Not Offered in 1973-74).

- 306Z SHAKESPEARE: FROM THE PAGE TO THE STAGE. Full Course. A. Newell
 A study of a few of Shakespeare's plays as works for the stage. Students with an interest in acting and directing will prepare scenes as workshop exercises. The frame of reference is the Elizabethan stage, which will be the subject of research. Prerequisite: Apply in advance to instructor for admission. Lectures: 3 hours per week for two terms.

- 308Z STUDIES IN DRAMA. Full Course.
 Modern Drama in 1973-74.
 This course will study different kinds and periods of drama each year.

- 309A LITERARY THEATRE. Half Course. P. Spensley
 Drama as theatre. Students interested in dramatic literature will study plays from the point of view of production through preparation of scenes for class workshop. The course may build towards a public performance. Prerequisite: Entrance by permission of the instructor. Lectures: 3 hours per week, first term.

- 311B LITERARY THEATRE IN THEORY AND PRACTICE. Half Course. P. Spensley
 Prerequisite: English 309A. Lectures: 3 hours per week, second term.

- 310Z TRAGEDY. Full Course.
 The course will explore tragedy, as a challenge to the complacency of viewers, to the artistic and human abilities of the dramatists, and to the conceptualizations of the critics. Examples will be drawn from Greek, Elizabethan and Modern drama. Lectures: 3 hours per week for two terms.

- 312Z THE ORAL INTERPRETATION OF POETRY AND DRAMA. Full Course. H. Hill
 The aim of this course is to produce a deeper appreciation of the rhythm and texture of the written word. We shall choose scenes from plays and study the relationship of dialogue to character, emphasis to meaning. Lectures: 3 hours per week for two terms.

- 314Z TIME AND THE DRAMA. Full Course. J. Zuckermann
The course will consider plays from a wide variety of periods and theatres, concentrating on the effects upon dramatic form of the necessary time-limit on the length of a play, on the immediacy of dramatic presentation, and on the resulting interest in time as a theme in drama. Students enrolled in this course will be divided into three groups: each group will meet once a week for one and a half hours.
- 316Z SHAKESPEARE AND SOME MODERN WRITERS. Full Course.
(Not Offered in 1973-74).
A study of some ideas and preoccupations in plays of Shakespeare in the context of their treatment in later literature. We will study, for example, *King Lear* and *Waiting for Godot*; *Hamlet* and *Rosencrantz and Guildenstern*; *Antony and Cleopatra* and *A Farewell to Arms*. Lectures: 3 hours per week for two terms.
- 318Z EPIC FORMS IN MODERN FICTION. Full Course. M. Philmus
The course is designed to examine epic structures and modes in representative work of English and American fiction of the nineteenth and the twentieth centuries. Lectures: 3 hours per week for two terms.
- 319A TWENTIETH CENTURY BRITISH LITERATURE. Half Course. K. Waters
To the end of World War I: Conrad (*Heart of Darkness*), Hardy (a few selected poems), Bernard Shaw, Joyce (*The Dead* and *Portrait of the Artist*), Lawrence, Yeats (selected poetry), Wilfred Owen (selected war poetry). Lectures: 3 hours per week, first term.
- 321B TWENTIETH CENTURY BRITISH LITERATURE. Half Course. K. Waters
Post World War I to the Present: from among T.S. Eliot, E.M. Forster, Virginia Woolf, Waugh, Auden, Beckett, Osborne, Sillitoe, Pinter, Doris Lessing, Anthony Burgess, contemporary poets. Lectures: 3 hours per week, second term.
- 323A MODERN AMERICAN FICTION. Half Course.
(Not Offered in 1973-74).
The twentieth century American novel up to 1945. Authors read will include Dreiser, Faulkner, West, H. Roth and Wright. Lectures: 3 hours per week, second term.
- 325B CONTEMPORARY AMERICAN FICTION. Half Course.
(Not Offered in 1973-74).
The twentieth century American novel since 1945. Authors read will include Faulkner, Warren, F. O'Connor, Bellow and Mailer. Lectures: 3 hours per week, second term.
- 326X THE PSYCHOLOGICAL NOVEL. Full Course. L. Nowicki
(In 1973-74 offered as a half course, first term only).
Study of the development of the modern psychological novel from the nineteenth century to the present, with emphasis upon the interrelationship between psychology and literature. Part of the course will focus on material other than the novel. Close analysis of the tendency to portray the subjective world by means of dream, interior monologue, and stream of consciousness will be stressed.
- 327A TWENTIETH CENTURY AMERICAN LITERATURE. Half Course. L. Nowicki
A selective study of major fictional works of twentieth century American Literature to be chosen from amongst the following: Anderson, Fitzgerald, Hemingway, West, Steinbeck, Mailer, Kerouac, Ellison and Mailer. Lectures: 3 hours per week, first term.

- 328Z THE MODERN NOVELLA. Full Course.
Short novels of Melville, James, Dostoevsky, Tolstoy, Conrad and other major nineteenth and twentieth century American and European authors. Lectures: 3 hours per week for two terms.
- 329A CANADIAN POETRY. Half Course. E. Buitenhuis
A study of the beginnings and early development of Canadian poetry. Emphasis will be placed both on the historical development of this early writing and on the aesthetic merits of individual poems. Selections from Roberts, Carman, Lampman, Pratt, Birney and others in *The Oxford Book of Canadian Verse* will be used. Lectures: 3 hours per week, first term.
- 331B CANADIAN POETRY. Half Course. E. Buitenhuis
The continuing development of Canadian poetry will be studied in both its historical and aesthetic aspects. The impact of urbanization, the rise of small journals, and internationalism will be considered. Poets such as Scott, Layton, Purdy, Cohen and Atwood among others will be studied in detail. Lectures: 3 hours per week, second term.
- 333A CANADIAN FICTION. Half Course.
This course will examine a large number of representative Canadian texts written before the second world war. It will attempt to show how writers in Canada have come to terms with the powerful questions which our own times ask. Moreover, issues like national identity, regionalism and the native people will receive attention. Lectures: 3 hours per week, first term.
- 335B CANADIAN FICTION. Half Course.
This course will examine a large number of representative Canadian texts written after the second world war. It will attempt to show how writers in Canada have come to terms with the powerful questions which our own times ask. Moreover, issues like national identity, regionalism and the native people will receive attention. Lectures: 3 hours per week, second term.
- 332Z PSYCHOLOGY AND LITERATURE. Full Course. R. Martin
A study of the relation between the basic theories of psychology and psychoanalysis and aesthetics and literary criticism, through a consideration of the Oedipus complex in *Oedipus Rex*, *Hamlet*, and *Sons and Lovers* (first term) and of archetypes and mythic patterns in literary and pseudo-literary forms, such as fairy tales, children's stories, and comic strips (second term). Lectures: 3 hours per week for two terms.
- 334Z INTRODUCTION TO AMERICAN STUDIES. Full Course.
(Not Offered in 1973-74).
An interdisciplinary consideration of the elements that go toward making up the "American Character" and the nature of art and culture in America: studies in literature, history, sociology, psychology, religion, and fine arts. Lectures: 3 hours per week for two terms.
- 337A WOMEN AND LITERATURE. Half Course. K. Waters
A selection of novels, short stories, poems and plays (from among George Eliot, Ibsen, Shaw, Lawrence, Mary McCarthy, Virginia Woolf, Margaret Atwood, Sylvia Plath, Harold Pinter, Leonard Cohen, Norman Mailer, Doris Lessing) in which woman is of major importance, either as the central experiencing character, or as the embodiment of sexual archetypes and social roles. Lectures: 3 hours per week, first term.
- 339B WOMEN AND LITERATURE. Half Course.
(Not Offered in 1973-74).
An intensive study of several of the above writers.

- 338Z AMERICAN LITERATURE. Full Course. A. Newell
The growth of American literature in its various forms will be surveyed in relation to regional, sociological, ideological, literary and other forces that enter into the emerging patterns of American Literature and culture. The best writers from Colonial times to the present will be read. Lectures: 3 hours per week for two terms.
- 340Z THE NOVEL AND ITS RELATION TO TWENTIETH CENTURY ART THEORY. Full Course.
(Not Offered in 1973-74).
Lectures: 3 hours per week, for two terms.
- 341 CONTINENTAL LITERATURE. Half Course.
(Not Offered in 1973-74).
- 342Z NINETEENTH CENTURY FICTION. Full Course. L. Hallett
Emphasis will be on the variety of fictional modes and styles used during this period, and their relevance to the social and intellectual history of the age. Lectures: 3 hours per week for two terms.
- 345A POETRY. Half Course.
An introduction to the methods of reading poetry. Lectures: 3 hours per week, first term.
- 347B POETRY. Half Course.
(Not Offered in 1973-74).
An exploration of the major types of poetic form and language. Lectures: 3 hours per week, second term.
- 346Z LITERATURE: IDEAS AND MYTHS. Full Course. R. Wareham
An exploration through literature of some of the myths which generate our ideas and some of the ideas which rationalize our myths. A study of *Gilgamesh*, *The Republic* of Plato, *Antony and Cleopatra*, *The Marriage of Heaven and Hell*, *Crime and Punishment*, *2001* and other works. Lectures: 3 hours per week for two terms.
- 348Z POETRY WRITING WORKSHOP. Full Course.
In 1973-74, this course will be offered by the visiting Canadian poet-in-residence.
- 349B PLAYWRITING WORKSHOP. Half Course. P. Spensley
The writing and possible experimental staging of students' one-act plays.
- 351A THE DEVELOPMENT OF THE CANADIAN THEATRE. Half Course. P. Spensley
The roles of the professional, amateur, and educational practitioner, festivals, regionalism, art councils, national bodies, and various outstanding theatre personalities, and the cultural boom of the sixties.
- 353B THE DEVELOPMENT OF THE THEATRE. Half Course. P. Spensley
Survey of the history of the theatre from primitive times to the twentieth century. Lectures: 3 hours per week, second term.
- 355A COMMONWEALTH LITERATURE.
(Not Offered in 1973-74). (Refer to Evening Division Calendar, 1973-74).
- 357B COMMONWEALTH LITERATURE.
(Not Offered in 1973-74).
- 360Z CHILDREN'S LITERATURE.
(Not Offered in 1973-74).

359A THE BIBLE AS BACKGROUND TO ENGLISH LITERATURE.
(Not Offered in 1973-74).

361B THE BIBLE AS BACKGROUND TO ENGLISH LITERATURE.
(Not Offered in 1973-74).

363 CANADIAN CRITICISM, THOUGHT, AND CONTROVERSY.
(Not Offered in 1973-74).

Courses Normally Restricted to Students taking Honours, or Majoring in English

400Z PRACTICAL CRITICISM. Full Course. G. Hooper
Through an examination of how language works, in ordinary life as well as in literature, this course will aim at developing discrimination, and a greater understanding and appreciation of linguistic and literary skills. Lectures: 3 hours per week for two terms.

401A DRAMA. Half Course. P. Spensley
A study of the art of dramatic art, focusing on the view of drama as an aesthetic whole, considering texts, playwrights, actors, and production as material, tools, contributors for the creation of a living event, a work of art. Lectures: 3 hours per week, first term.

403 FICTION. Half Course. R. Martin
A/B A selective study of the novel as form, the works to be chosen from English and American fiction. Close textual analysis, psychic and archetypal patterns, and the development of technique will be emphasized. Lectures: 3 hours per week, first term or second term.

404Z UNDERSTANDING POETRY. Full Course. R. Philmus
The concepts and methods of reading poetry, beginning with simple examples and proceeding through poems of graduated difficulty. Recommended for students who would really like to learn how to understand poetry. Lectures: 3 hours per week for two terms.

405 A POETRY. Half Course L. Hallett
A course for honours and majors students who would like to know why "what oft was thought" was "ne'er so well expressed". The emphasis will be on the variety of ways by which a poem translates a private perception into a communicated perception.

407B THE POEM. Half Course. K. Waters
"back off from this poem
it is a greedy mirror
you are into this poem from
the waist down .
nobody can hear you can they? "
This course promotes familiarity and enjoyment in poetry as an experience by getting into the language, images, music, architecture, and psychological/social context of a number of short poems. Lectures: 3 hours per week, second term.

406Z THE RISE OF PROSE FICTION. Full Course. M. Philmus
The course will explore the origin and development of European fiction in major works of the Middle Ages and the Renaissance, giving particular attention to their varying sources of inspiration, the narrative techniques they evolve, and the basic genres they establish. Lectures: 3 hours per week for two terms.

- 408Z HISTORY OF THE ENGLISH LANGUAGE. Full Course. G. Hooper
A study of the development of the language from its beginnings to the twentieth century: a course designed partly for those students intending to go on to further studies in English at graduate school, and partly for those interested in languages in general. Lectures: 3 hours per week for two terms.
- 410Z MASTERPIECES OF ENGLISH LITERATURE WRITTEN BEFORE 1603. Full Course.
(Not Offered in 1973-74).
A course designed to introduce the student to the origin and development of English literature in the Anglo-Saxon, Medieval, and Tudor periods. *Beowulf* (in translation). Anglo-Saxon culture and poetry (in translation). Introduction to the works of Chaucer, Mallory, and other works from the period after 1066. Introduction to Spenser and other representative authors of the Tudor period. Introduction to the origin and development of drama before Shakespeare. Introduction to the history of the English language up to 1603. Lectures: 3 hours per week for two terms.
- 409A CHAUCER. Half Course. G. Hooper
A study of *The Canterbury Tales* in general, and of five or six tales in particular. Lectures: 3 hours per week, first term.
- 411B CHAUCER. Half Course.
(Not Offered in 1973-74).
A study of *Troilus and Criseyde* and selected early poems. Lectures: 3 hours per week, second term.
- 412Z MEDIEVAL LITERATURE. Full Course.
(Not Offered 1973-74).
- 413A SPENSER AND HIS BACKGROUND. Half Course. M. Philmus
This course is intended to examine Spenser's works — *The Amoretti* and *The Faerie Queene* in particular and their relations to the pertinent literary traditions, both English and continental. Lectures: 3 hours per week, first term.
- 415B ELIZABETHAN PROSE AND POETRY. Half Course. M. Philmus
Significant work of Elizabethan non-dramatic literature will be studied both as individual creations and as samples of the most important trends in non-dramatic verse and prose of the time. Lectures: 3 hours per week, second term.
- 417B ELIZABETHAN AND JACOBEAN DRAMA. Half Course. G. Hooper
Representative plays to be read will be selected from the works of some of the following contemporaries of Shakespeare in the golden age of English drama: Kyd, Marlowe, Lyly, Heywood, Jonson, Webster, Tourneur, Marston, Middleton, Beaumont and Fletcher, Massinger, Ford. Lectures: 3 hours per week, second term.
- 418Z SHAKESPEARE. Full Course. J. Zuckermann
A course covering a large number of Shakespeare's plays and some of his non-dramatic poetry. Students taking this course will be divided into small seminar groups, each of which will meet once a week for an hour and a half. Each seminar group will determine in discussion with the professor the order in which it treats the plays, the length of time it spends on each, and the emphasis of approach; but the ultimate aim for each group will be the broadest and fullest acquaintance with the works of Shakespeare possible.

- 420Z SHAKESPEARE. Full Course. A. Newell
Shakespeare's plays — histories, tragedies, comedies — will be studied in relation to the Elizabethan theatre and its tradition; the social, historical, and literary setting; Shakespeare's development as a dramatic artist; the body of Shakespearian criticism. An emphasis will be placed on appreciating each play as an individual creation intended for staging. Lectures: 3 hours per week for two terms.
- 421A SHAKESPEARE. Half Course. J. Herz
A close study of the histories and comedies. There will be a strong emphasis on the poetry and on the method of dramatic characterization and an attempt to explore the idea of theatre the plays contain. Students registered for both halves can arrange their work as if they were in full course. Lectures: 3 hours per week, first term.
- 423B SHAKESPEARE. Half Course. J. Herz
A close study of the tragedies and romances. There will be a strong emphasis on the poetry and on the method of dramatic characterization and an attempt to explore the idea of theatre the plays contain. Students registered for both halves can arrange their work as if they were in a full course. Lectures: 3 hours per week, second term.
- 424Z NATURE AND ART IN RENAISSANCE LITERATURE. Full Course.
R. Wareham
Should the artist represent nature or transform it? Texts from literature and criticism written before 1700. Lectures: 3 hours per week for two terms.
- 426Z SEVENTEENTH CENTURY POETRY. Full Course. J. Herz
The course will put major emphasis on the poetry of Milton. Other poets to be studied will be selected from among Jonson, Donne, Herbert, Herrick and Marvell. Lectures: 3 hours per week for two terms.
- 425A ART AND IDEAS IN THE EARLY SEVENTEENTH CENTURY. Half Course.
L. Hallett
A study of the poetry and some prose of the period, with special emphasis on the work of John Donne. Lectures: 3 hours per week, first term.
- 427B MILTON. Half Course. L. Hallett
Study of Milton's development as an artist and thinker from his school years through his involvement in the English Civil War to his final achievement in the epic genre. Readings will include the shorter poems, selected prose, *Paradise Lost*, and *Samson Agonistes*. Lectures: 3 hours per week, second term.
- 429A RESTORATION DRAMA. Half Course.
A study of plays by Etherege, Wycherley, Congreve, Dryden, Vanbrugh, Farquhar and others, intended to serve as an introduction both to this phase of English drama and to some of the major ideas and preoccupations of Restoration and Eighteenth Century literature. Lectures: 3 hours per week, first term.
- 431B EIGHTEENTH CENTURY PROSE. Half Course.
A study of major Eighteenth Century prose writings, especially novels, prose satire and biography. Lectures: 3 hours per week, second term.
- 433A THE RESTORATION AND EIGHTEENTH CENTURY. Half Course. R. Philmus
Dryden, Swift and Pope. Lectures: 3 hours per week, first term.

- 435B THE RESTORATION AND EIGHTEENTH CENTURY. Half Course. R. Philmus
Johnson, Richardson and Fielding. Prerequisite: 433A or in consultation
with the professor. Lectures: 3 hours per week, second term.
- 436Z THE ROMANTICS. Full Course. R. Philmus
Blake, Wordsworth, Coleridge, Byron, Keats and the Shelleys. Lectures: 3
hours per week for two terms.
- 437A THE ROMANTIC PERIOD. Half Course.
The course will survey the major poets of the Romantic period (Blake,
Wordsworth, Coleridge) with historical background and emphasis on the
common technical and thematic element of Romantic poetry. Lectures: 3
hours per week, first term.
- 439B THE ROMANTIC PERIOD. Half Course.
Same as above, treating Byron, Shelley and Keats. Lectures: 3 hours per
week, second term.
- 441A VICTORIAN LITERATURE. Half Course. J. Zuckermann
A study of Victorian prose works concerned with the role of the
individual in society, beginning with two major social novels, *Middlemarch*
and *Vanity Fair*. Students enrolled in this course will be divided into three
groups: each group will meet once a week for one and a half hours.
- 443B VICTORIAN LITERATURE. Half Course. J. Zuckermann
Complementary to 441A, but also suitable as an independent half course.
A study of Victorian poetry and novels concerned with the individual
consciousness, beginning with Tennyson and Browning. Students will be
divided into three groups: each group will meet once a week for one and a
half hours.
- 444Z NINETEENTH CENTURY LITERATURE. Full Course.
The literature of the Victorian period, with emphasis on major poets and
representative novelists. Attention will be equally divided between the
nature and development of the Victorian viewpoint and the aesthetic
qualities of the works examined. Lectures: 3 hours per week for two
terms.
- 442Z NINETEENTH CENTURY FICTION. Full Course. E. Buitenhuis
Representative fiction from Jane Austen to Hardy. Lectures: 3 hours per
week for two terms.
- 446Z TWENTIETH CENTURY BRITISH LITERATURE. Full Course. K. Waters
Emphasis will be placed upon fiction by Conrad, Lawrence, Joyce and
Woolf; poetry by Yeats and Eliot; plays by Shaw and Pinter. Authors
from among O'Casey, Forster, Huxley, Waugh, Auden, Osborne, Lessing,
Sillitoe and Beckett will also be included. Lectures: 3 hours per week for
two terms.
- 445A AMERICAN LITERATURE, NINETEENTH CENTURY. Half Course. L. Nowicki
A study of archetypal patterns, literary and philosophical concerns of
19th century American Literature. Reading material will be chosen from
among: Poe, Thoreau, Hawthorne, Melville, James and Twain. Lectures: 3
hours per week, first term.
- 447B AMERICAN LITERATURE, TWENTIETH CENTURY. Half Course. R. Martin
A study of archetypal patterns, literary and philosophical concerns of
20th century American Literature. Reading material will be chosen from
among: Norris, Anderson, Fitzgerald, Hemingway, Faulkner, West,

Steinbeck, Mailer, Kerouac, Salinger, Updike. Lectures: 3 hours per week,
second term.

- 449A THE SHORT STORY IN AMERICA. Half Course.
(Not Offered in 1973-74).
Representative examples of American short stories will be included,
chosen from the nineteenth and twentieth centuries. Although there will
be a major emphasis on *explication de texte*, the stories will also be
considered in the light of American cultural and historical development.
Readings in Hawthorne, Melville, James, Fitzgerald, Hemingway and
others. Lectures: 3 hours per week, first term.
- 451A AMERICAN POETRY. Half Course. R. Martin
A consideration of the development of the art of poetry in America
through a study of the major American poets. Various aesthetics from the
Puritan-Metaphysical strain to the Beat Movement and Concrete Verse will
be examined. Principal emphasis will be placed on poets such as Poe,
Dickinson, Whitman, Crane, Eliot, Pound and others. Lectures: 3 hours
per week, first term.
- 453 AMERICAN POETRY. Half Course.
(Not Offered in 1973-74).
- 452Z MODERN FICTION. Full Course. (Not Offered in 1973-74)
Works of major nineteenth and twentieth century American and European
novelists. Authors read will include Dostoevsky, Tolstoy, Conrad,
Faulkner, Camus and Grass. Lectures: 3 hours per week for two terms.
- 454Z CANADIAN LITERATURE. Full Course. E. Buitenhuis
An intensive study of selected readings to be arrived at through
consultation with the students. Lectures: 3 hours per week for two terms.
- 500Z ADVANCED RESEARCH AND THESIS. Full Course.
A small number of seminars or tutorials on topics, to vary from year to
year. Registration limited to Honours students in their final year. All
students must consult with the Department in advance.
- 501A ANGLO-SAXON. Half Course.
(Not Offered in 1973-74).
- 503B MIDDLE ENGLISH. Half Course.
(Not Offered in 1973-74).
- 502Z HISTORY OF CRITICISM. Full Course.
(Not Offered in 1973-74).
- 580Z INDEPENDENT STUDIES
- 590Z JOINT TUTORIAL IN HISTORY AND ENGLISH.
- 592Z JOINT TUTORIAL IN MODERN LANGUAGES AND ENGLISH.

Etudes Francaises

Chairman: C. Laurion

Courses leading to an Honours B.A. in French.

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
French 310Z or 312Z	French 432Z	French 532Z
French (either F.342Z or F.344Z)	French 421A	French 534Z
French (one of F.360Z, F.364A, F.368Z)	French (either F.423B or F.425B)	French (one of F.540Z, F.542Z and F.544Z)
Elective	French 428Z	Elective
Elective	Elective	Elective

Courses leading to an Honours B.A. in French Language.

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
French 310Z or 312Z	French 421A	French 432Z
French (either F.342Z or F.344Z)	French 428Z	French (either two of F.534X, F.532X, F.540X, F.452X and F.544X, or one of F.540Z, F.542Z and F.544Z)
French (one of F.360Z, F.364Z, F.368Z)	French 438Z	French 538Z
Elective	French 452X*	Elective
Elective	Elective	Elective

Courses leading to an Honours B.A. in French (Etudes québécoises).

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
French 310Z or 312Z	French (two of F.360Z, F.364Z and F.368Z)	French 432Z
French (either F.342Z, or F.344Z)	French 428Z	French 421A
French (one of F.360Z, F.364Z, F.368Z)	Elective	French (either two of F.534X, F.532X, F.540X, F.542X and F.544X or one of F.540Z, F.542Z and F.544Z)
Elective	Elective	French 572X
Elective		Elective
		Elective

* X after a full course number indicates a one term (½ credit)

Courses leading to a B.A. with a Major in French

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
French 310Z or 312Z	French 421A	French (one of F.540Z, F.542Z and F.544Z)
French (either F.342Z or F.344Z)	French (either F.423B or F.425B)	French 572Z
French (one of F.360Z, F.364Z, F.368Z)	French 432Z	Elective
Elective	Elective	Elective
Elective	Elective	Elective

Course leading to a B.A. with a double Major in French and one on the Modern Languages.

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
French 310Z or 312Z	French 421A	French (one of F.540Z, F.542Z and F.544Z)
French (either F.342Z or F.344Z)	French (either F.423B or F.425B)	French 572Z
French (one of F.360Z, F.364Z, 368Z)	French 432Z	Modern Languages
Modern Languages	Modern Languages	Modern Languages
Modern Languages	Modern Languages	Modern Languages
	Elective	

Alterations may be brought to the above programmes, from year to year, but the whole three-year program of a given student remains the one appearing in the calendar of the year of his registration in French, unless otherwise authorized by the Chairman of the Department.

Students registered in an Honours programme are required to take a final comprehensive examination at the end of their third year for which they will prepare, under the supervision of the Department Chairman, during their second and third years. Students failing to pass that examination successfully will be granted a Major degree instead of an Honours one.

An Honours student in French is required to have normally a mark of 65% in each of his French courses as well as in his final comprehensive examination.

Students honouring or majoring in French, or in French and Modern Languages will have a faculty advisor with whom they will consult. Honours students will consult with their advisors in particular to prepare, in their first or second year, the reading list required for their comprehensive examinations.

A student may take half of a full course (and then receive a mark out of 50) with the previous authorization of the Chairman of the Department of French Studies.

Students wishing to pursue a programme in Double Honours French and one of the Modern Languages should consult with the chairmen of both departments and have their registration approved by both of them.

Students wishing to pursue a programme leading to an Honours in French AND a Major in one of the Modern Languages, OR an Honours in one of the Modern Languages AND a Major in French should consult with the Chairmen of both Departments and have their registration approved by both Chairmen.

Double Honours OR Double Majors in French and in any other field can be arranged in consultation with the Chairmen of both Departments concerned and their approval.

Certificate of Proficiency in French Language.

The students who satisfy the requirements described below will have on their transcripts a special mention attesting their proficiency in French language:

- The students working for that certificate will take a sequence of THREE full courses in French counting as three credits towards their degree.

- The three courses are determined in consultation with the department chairman; normally, the first year course is F.626 and the second is F.636.
- In order to qualify for the Certificate, a student must obtain a mark of no less than 70% in each of the three courses making up his Certificate's programme.
- A mark of 50 to 69%, although disqualifying for the obtention of the Certificate itself, does not cause any prejudice whatsoever to the student's degree, since a pass mark in the said course does count as a credit.

A student who is neither majoring nor honouring in French and whose knowledge of the French language is inadequate to enable him to write according to proper standards but sufficient to enable him to follow the course and take part into the discussions may register for a literature course and receive permission to write his assignments and examinations in ENGLISH. His transcript will then bear "In English" after the course number. Should that student later on decide to major or honour in French, such course will neither count as a French requirement nor as an elective if it has to be retaken as such.

COURSES FOR STUDENTS WHO ARE NEITHER HONOURING NOR MAJORING IN FRENCH.

All students who wish to take for the first time a University French language course will find one suited to their needs and to their level which will be assessed by means of a short and objective PLACEMENT TEST. As soon as class hours are known by those who wish to register early, an appointment may be taken for any one of the placement test sessions which will be held in the spring and in the summer (Please inquire with the secretary of the (University) Department of French Studies at Hingston Hall). More test sessions will also be held at registration, in the fall, to accommodate the students who have not taken an early registration.

- 604Z ELEMENTARY ORAL FRENCH. Full Course.
(300E) A lecture and laboratory course using the most up-to-date audio-visual method. An introduction to 606Z (300Y). Lectures: 3 hours per week plus language lab. for two terms.
- 606Z INTERMEDIATE ORAL FRENCH. Full Course.
(300Y) An audio-visual approach to everyday modern French through active student participation. Review of grammar and syntax through oral exercises. Lectures: 3 hours per week plus language lab. for two terms.
- 608Z ADVANCED ORAL FRENCH. Full Course.
(300Z) Follow-up of French 606Z (300Y). Lectures: 3 hours per week plus language lab. for two terms.
- 610Z INTENSIVE ORAL FRENCH. Full Course.
(302) The same type of training as in F.606Z and F.608Z, but given more intensively. Conversation based on everyday life, designed to provide the student with a practical working knowledge of French. Lectures: 6 hours per week plus language lab. for two terms.
- 612Z ADVANCED ORAL FRENCH. Full Course.
(304E) Follow-up of F.608Z (300Z) or F.610Z (302). The same type of training as in the above courses but at a higher level. A well-motivated student

should be able to speak French fluently at the end of this course.
Lectures: 3 hours per week for two terms.

- 614Z LANGUAGE AND CIVILIZATION FOR ARTS STUDENTS. Full
(304H) Course.
Practical review of the important structures of the French language. Readings of present day topics regarding the civilizations of French and Québec. Readings in French for the humanities. Translation. Lectures: 3 hours per week for two terms.
- 616Z LANGUAGE AND CIVILIZATION FOR COMMERCE STUDENTS. Full
(304C) Course.
Same level and study program as 614Z (304H) except that particular reference will be made in the commercial world. Texts selected from material used in Commerce courses. Lectures: 3 hours per week for two terms.
- 626Z ADVANCED LANGUAGE AND CIVILIZATION FOR ARTS
(306H) STUDENTS. Full Course.
Practical review of the major difficulties of the French language. French and Québec civilizations. Readings in French for the humanities. Advanced translation. Lectures: 3 hours per week for two terms.
- 628Z ADVANCED LANGUAGE AND CIVILIZATION FOR COMMERCE
(306C) STUDENTS. Full Course.
Same level and study program as 626Z (306H) except that the texts for reading and translation are selected in reference to the commercial world. No literature. Lectures: 3 hours per week for two terms.
- 636Z ADVANCED LANGUAGE AND TRANSLATION. Full Course.
(406) A continuation of F.626/628 (306). This course is designed for students who have already reached a fairly good level of competence in French. The programme aims at consolidating and furthering their oral and written proficiencies. There will be particular emphasis on composition and translation on a wide range of subjects taken from everyday life as well as from literature and the social sciences. Lectures: 3 hours per week for two terms.
- 502Z QUEBEC LITERATURE. Full Course.
(Taught in English). A course designed for English speaking students who wish to gain insight into the thought processes, attitudes and way of life of Québec as revealed by some of the most striking works of prose and poetry in her literature. A large choice from the following list depending upon availability of texts and the interest of the group: Ringuet, *Thirty Acres*; Roy, *Street of Riches*; Lemelin, *The Town Below*; Bessette, *Not for Every Eye*; Langevin, *Dust over the City*; Blais, *Mad Shadows*; Jasmin, *Ethel and the Terrorist*; Thériault, *Agaguk*; Ducharme, *The Swallower swallowed*; Gélinas, *Yesterday the children were dancing*; Sylvestre's *Anthologie de la poésie canadienne française*. For reference: Tougas' *History of French Canadian literature*. Lectures: 3 hours per week for two terms.
- 550Z THEATRE ET DICTION. Cours complet.
L'inscription ne vaut qu'avec l'approbation du professeur; de plus, elle est limitée. La présence aux cours est obligatoire. Les étudiants présenteront une pièce au premier semestre et une autre au second semestre. Ils choisiront avec le professeur les pièces à présenter. 3 heures par semaine; deux semestres.

- 596Z LITTERATURE COMPAREE — COMPARATIVE LITERATURE. LITTERATURES CANADIENNES — CANADIAN LITERATURES. Cours complet.
Etude comparée des littératures canadiennes d'expression française et d'expression anglaise. Existe-t-il une seule littérature canadienne dans les deux langues, ou, en réalité, y a-t-il deux littératures séparées, au Canada?
■ Comparative study of French and English Canadian Literature. Is there only one literature in two languages or has Canada produced two distinct and separate literatures? Textes — Texts: Mitchell, *Who has seen the wind?*; Savard, *Menaud maître-draveur*; MacLennan, *The Watch that ends the night*; Simard, *Mon fils pourtant heureux*; Lawrence, *Rachel-Rachel*; Hébert, *Kamouraska*; Davies, *Fifth Business*; Carrier, *La Guerre, Yes Sir!*; Cohen, *Beautiful losers*; Godbout, *Salut Galarneau*. 3 heures par semaine; deux semestres.
- 598Z PROGRAMME LIBRE ("INDEPENDANT STUDIES PROGRAMME"). Cours complet.
L'inscription à ce cours se fait après consultation avec le ou les professeurs devant surveiller la bonne marche des travaux et avec l'approbation du Département.
- MAJOR AND HONOURS COURSES (Cours spécialisés)**
(Les étudiants qui ne sont pas inscrits en Major ou en Honours French peuvent s'inscrire à ces cours avec la permission du Directeur du Département).
- 310Z COMPOSITION, GRAMMAIRE AVANCEE ET METHODOLOGIE. Cours complet.
Introduction aux études et travaux littéraires. Technique de l'explication de texte et de la composition écrite. Notions sur l'évolution de la critique. Ce cours est destiné aux étudiants qui sont inscrits en Major ou en Honours French et qui ont suivi moins de trois cours de français au niveau du CEGEP (F.130, F.230G, F.230L, ou leur équivalent). Ce cours est éliminatoire. 6 heures par semaine; deux semestres.
- 312Z INTRODUCTION AUX ETUDES LITTERAIRES SUPERIEURES. Cours complet.
Technique de l'explication de texte et de la dissertation littéraire; grammaire avancée et méthodologie. Notions sur l'évolution de la critique. Ce cours est destiné aux étudiants qui sont inscrits en Major ou en Honours French. Ce cours est éliminatoire. Condition préalable: F.230G et 230L (CEGEP) ou leur équivalent. 3 heures par semaine; deux semestres.
- 342Z LITTERATURE DU XIXe SIECLE (1800-1850). Cours complet.
La génération romantique: l'inquiétude, le rêve, l'énergie. Leçons, séances de travaux pratiques et travaux de recherche. Le roman: Chateaubriand, *René*; Constant, *Adolphe*; Vigny, *Servitude et grandeur militaires*; Stendhal, *Le Rouge et le Noir*; Balzac, *Le Père Goriot*. La poésie: Lamartine, *les Méditations*; Vigny, *les Destinées*; Hugo, *les Contemplations*; Musset, Nerval et Gautier. Le théâtre: Hugo, *Ruy Blas*; Vigny, *Chatterton*; Musset, *Lorenzaccio*. Lagarde et Michard, *le XIXe siècle*. 3 heures par semaine; deux semestres.
- 344Z LITTERATURE DU XIXe SIECLE (1850-1900). Cours complet.
Le monde bourgeois et anti-bourgeois; les courants réaliste, naturaliste, symboliste et fin de siècle. Leçons, séances de travaux pratiques et travaux de recherche. La poésie: parnasse et symbolisme. Baudelaire, *les Fleurs du Mal*; Verlaine, *Romances sans paroles*; Rimbaud, *Une Saison en Enfer*; Mallarmé, *l'Après-midi d'un faune*. Le roman: réalisme et décadence:

Flaubert, *Madame Bovary*; Fromentin, *Dominique*; Zola, *Germinal*; Huysmans, *A Rebours*; Bourget, *le Disciple*. Le théâtre: Dumas fils et Courteline; Becque, *les Corbeaux*; Maeterlinck, *Pelléas et Mélisande*; Lagarde et Michard, *le XIXe siècle*. 3 heures par semaine; deux semestres.

- 360Z LITTERATURE QUEBECOISE: LE ROMAN. Cours complet.
Origines, influences, évolution, étude d'oeuvres modernes. Leçons, séances de travaux pratiques et travaux de recherche. Textes: Ringuet, *Trente Arpents*; Guévremont, *le Survenant*; Roy, *Bonheur d'occasion*; Lemelin, *Au pied de la pente douce*; Langevin, *Poussière sur la ville*; Thériault, *Agaguk*; Bessette, *Le Libraire*; Hébert, *Kamouraska*; Ferron, *L'Amélanchier*; Ducharme, *L'Avalée des avalés*. 3 heures par semaine; deux semestres.
- 364Z LITTERATURE QUEBECOISE: LA POESIE. Cours complet.
Origines et influences: évolution thématique et esthétique. Leçons, séances de travaux pratiques et travaux de recherche. Textes: Fréchette, Choquette, Lasnier (Collection Classiques Canadiens): Nelligan, *Poésies Complètes*; Morin, *Oeuvres poétiques*; Desrochers, *A l'Ombre de l'Orford*; Saint-Denys Garneau, *Poésies complètes*; Grandbois, *Poésies*; Hébert, *Poèmes*; Lapointe, G., *Ode au Saint-Laurent*; Chamberland, P., *Terre Québec*; Miron, *L'Homme rapaillé*; Sylvestre, G., *Anthologie de la poésie canadienne-française*; Tougas, G., *Histoire de la littérature canadienne-française*. 3 heures par semaine; deux semestres.
- 368Z LITTERATURE QUEBECOISE: L'ESSAI, LE THEATRE ET LE CONTE. Cours complet.
Evolution thématique et esthétique. Leçons, séances de travaux pratiques et travaux de recherche. L'essai: J.-P. Tardivel, A. Buies, E. de Nevers, L. Groulx, P.-E. Borduas, Jean Lemoyne, F. Dumont, . . . Le théâtre: Gélinas, Toupin, Dubé, Languirand, . . . Le conte: de Gaspé, père et fils, J.-C. Taché, Thériault, Vigneault, etc. . . 3 heures par semaine; deux semestres.
- 421A LITTERATURE DU XVIIe SIECLE. Demi-cours.
Le théâtre et la dramaturgie classiques.
Etude du théâtre classique dans l'oeuvre de Corneille, de Racine, et de Molière. Leçons, séances de travaux pratiques et travaux de recherche. Textes: *Polyeucte*; *Britannicus*; *L'Ecole des femmes*; Lagarde et Michard, *le XVIIe siècle*. 3 heures par semaine; premier semestre.
- 423B LITTERATURE DU XVIIe SIECLE. Demi-cours.
Les moralistes, les penseurs et les orateurs.
Leçons, séances de travaux pratiques et travaux de recherche. Textes: Descartes, *Le Discours de la Méthode*; Pascal, *Pensées*; La Rochefoucauld, *Maximes*; Bossuet, *Oraisons funèbres et Sermons*; La Bruyère, *Les Caractères*; Lagarde et Michard, *XVIIe siècle*. 3 heures par semaine; deuxième semestre.
- 425B LITTERATURE DU XVIIe SIECLE. Demi-cours.
La fable, le roman, la littérature épistolaire, les mémoires.
Leçons, séances de travaux pratiques et travaux de recherche. Textes: La Fontaine, *Fables*; Mme de La Fayette, *La Princesse de Clèves*; Mme de Sévigné, *Lettres*; Retz, *Mémoires*; Saint-Simon, *Mémoires*; Lagarde et Michard, *XVIIe siècle*. 3 heures par semaine; un semestre.
- 428Z HISTOIRE DE LA LANGUE ET LINGUISTIQUE. Cours complet.
Introduction à la linguistique; linguistique descriptive et linguistique historique. Application au français: description du français moderne et histoire de la langue française. Cours obligatoire pour les étudiants

“Honours” et fortement recommandé aux “Majors”. Leçons et séances de travaux pratiques. Textes: F. de Saussure, *Cours de linguistique générale*; G. Mounin, *La linguistique*; A. Martinet, *Éléments de linguistique générale*; Malmberg, *La phonétique*; A. Dauzat, *Tableau de la langue française*; Guiraud, *L'Ancien français*; Guiraud, *Le Moyen français*. 3 heures par semaine; deux semestres.

- 432Z LITTÉRATURE DU XVIII^e SIECLE. Cours complet.
Le roman et le théâtre.
Leçons, séances de travaux pratiques et travaux de recherche. Textes: Lesage, *Gil Blas*; Prévost, *Manon Lescaut*; Marivaux, *Le Paysan Parvenu*, *Le jeu de l'Amour et du Hasard*; Montesquieu, *Lettres Persanes*; Voltaire, *Zadig*, *Candide*; Diderot, *Le Neveu de Rameau*; Rousseau, *La Nouvelle Héloïse*; Bernardin de Saint-Pierre, *Paul et Virginie*; Beaumarchais, *Le Mariage de Figaro*; Lagarde et Michard, *XVIII^e siècle*. 3 heures par semaine; deux semestres.
- 438Z METHODOLOGIE DU FRANCAIS LANGUE SECONDE. Cours complet.
Initiation aux principes et méthodes de la linguistique appliquée et de la phonétique corrective. Etude et évaluation de plusieurs méthodes d'enseignement du français langue seconde pour enfants, adolescents et adultes. Etude et préparation de tests et examens. Travaux pratiques. 3 heures par semaine; deux semestres.
- 452Z TRADUCTION AVANCEE. Cours complet.
L'art de la traduction. Stylistique comparée du français et de l'anglais. Traduction de textes littéraires de l'anglais au français. 3 heures par semaine; deux semestres.
- 532Z LITTÉRATURE DU MOYEN AGE. Cours complet.
Initiation à la langue et à la littérature du moyen âge. Choix d'oeuvres épiques, romanesques, lyriques et historiques. Textes: *La Chanson de Roland*; *Tristan et Iseut*; Chrétien de Troyes, *Yvain*; *La Chastelaine de Vergi*; Guillaume de Lorris, *Le Roman de la rose*; Villehardouin, *La Conquête de Constantinople*; Villon, *Poésies*; Lagarde et Michard, *Le moyen âge*. Leçons et séances de travaux pratiques. 3 heures par semaine; deux semestres.
- 534Z LITTÉRATURE DU XVI^e SIECLE. LA RENAISSANCE ET L'HUMANISME EN FRANCE. Cours complet.
Prose et Poésie. Origines, évolution et oeuvres maîtresses. Textes: Rabelais, *Gargantua*; Du Bellay, *Défense et Illustration de la langue française*, *Regrets*; Ronsard, *Les Amours*; Montaigne, *Les Essais*; d'Aubigné, *Les Tragiques*; Lagarde et Michard, *XVI^e siècle*.
- 538Z PEDAGOGIE DE L'AUDIO-VISUEL. Cours complet.
Les étudiants se familiariseront avec les appareils audio-visuels employés dans l'enseignement et étudieront l'usage de ceux-ci dans l'enseignement du français langue seconde. Ils étudieront, en particulier, l'usage du magnétophone et du laboratoire de langue et apprendront la technique de la préparation des leçons et exercices adaptés aux divers média de communication (bandes sonores, films, télévision). Travaux pratiques. 3 heures par semaine; deux semestres.
- 540Z LITTÉRATURE DU XX^e SIECLE. LA POESIE.
(Not offered in 1973-74).
- 542Z LITTÉRATURE DU XX^e SIECLE. LE ROMAN. Cours complet.
Evolution. Structure et technique. Thèmes. Le nouveau roman. Leçons,

séances de travaux pratiques et travaux de recherche. Textes: Alain-Fournier, *Le Grand Meaulnes*; Gide, *La Porte Etroite*; Proust, *Du Côté de chez Swan*; Mauriac, *Thérèse Desqueyroux*; Bernanos, *Journal d'un curé de campagne*; Malraux, *La Condition humaine*; Camus, *L'Etranger*; Sartre, *La Nausée*; Lagarde et Michard, *XX^e siècle*. 3 heures par semaine; deux semestres.

- 544Z LITTÉRATURE DU XX^e SIECLE. LE THEATRE. Cours complet.
Etude de l'évolution du théâtre, des structures dramatiques, du langage théâtral. Etude aussi de la condition humaine, de son illustration et de sa défense, dans le théâtre du XX^e siècle. Leçons, séances de travaux pratiques et de recherche. Textes: Jarry, *Ubu*; Claudel, *L'Annonce faite à Marie*; Giraudoux, *La Guerre de Troie n'aura pas lieu*; Anouilh, *Becket ou l'honneur de Dieu*, *La Sauvage*; Montherlant, *La Reine Morte*; Sartre, *Huis Clos*, *les Mouches*; Camus, *Caligula*, *Le Malentendu*; Schéhadé, *Monsieur Bob'le*; Beckett, *En attendant Godot*, *Fin de Partie*; Ionesco, *La Cantatrice chauve*, *Rhinocéros*; Genet, *Haute Surveillance*, *Le Balcon*. Quelques pièces québécoises contemporaines. 3 heures par semaine; deux semestres.
- 550Z THEATRE ET DICTION. Cours complet.
L'inscription ne vaut qu'avec l'approbation du professeur; de plus, elle est limitée. La présence aux cours est obligatoire. Les étudiants présenteront une pièce au premier semestre et une autre au second semestre. Ils choisiront avec le professeur les pièces à présenter. 3 heures par semaine; deux semestres.
- 572Z CIVILISATIONS FRANCAISE ET QUEBECOISE. Cours complet.
Le monde français; ses principales caractéristiques; unité et diversité. Le monde québécois; ses origines, son évolution. Aspects de la vie économique, politique et sociale en France et au Québec. Aspects de la vie intellectuelle et artistique en France et au Québec. Les relations franco-québécoises. Textes: Guy Michaud, *Guide France*; Yves Trotignon, *La France au XX^e siècle*. 3 heures par semaine; deux semestres.
- 596Z LITTÉRATURE COMPAREE – COMPARATIVE LITERATURE.
LITTÉRATURES CANADIENNES – CANADIAN LITERATURES.
Cours complet.
Etude comparée des littératures canadiennes d'expression française et d'expression anglaise. Existe-t-il une seule littérature canadienne dans les deux langues ou, en réalité, y a-t-il deux littératures séparées, au Canada?
■ Comparative study of French and English Canadian Literature. Is there only one literature in two languages or has Canada produced two distinct and separate literatures? Textes – Texts: Mitchell, *Who has seen the wind?*; Savard, *Menaud maître-draveur*; MacLennan, *The Watch that ends the night*; Simard, *Mon fils pourtant heureux*; Lawrence, *Rachel Rachel*; Hébert, *Kamouraska*; Davies, *Fifth Business*; Carrier, *La Guerre, yes Sir!*; Cohen, *Beautiful Losers*; Godbout, *Salut Galarneau*.
- 598Z PROGRAMME LIBRE (“INDEPENDENT STUDIES PROGRAMME”).
Cours complet.
L'inscription à ce cours se fait après consultation avec le ou les professeurs devant surveiller la bonne marche des travaux et avec l'approbation du Département.

History

Chairman: W.E. Akin

Courses leading to a B.A. with a Major in History

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
History*	History+	History+
History*	History+	History +
Elective	Elective	Elective
Elective	Elective	Elective
Elective	Elective	Elective

- * Elective from Survey or Intermediate Courses.
- + Elective from Survey or Intermediate Courses. Elective from Honours Courses with permission of instructor only. Honours course *not* required, but Majors students encouraged to take one Honours course.

Courses Leading to an Honours B.A. in History

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
History*	History+	Honours History Tutorial
History*	History (Hons.)**	History (Hons.)**
History*	History (Hons.)**	History+
Elective	Elective	Elective
Elective	Elective	Elective

- * Elective from survey or intermediate courses
- + Elective from survey, intermediate, or honours courses
- ** Elective from Honours courses.

To enter and remain in the honours programme, the student must have an average of 70% or above in all history courses.

Of the honours history courses in the second and third year, one must be in a field other than the tutorial.

Students in the honours history programme will be assigned a faculty advisor, who will normally be the director of their honours history tutorial, and with whom they must consult concerning their selection of courses.

There is a comprehensive oral examination for all honours history students toward the end of their final year.

NOTE: Students may take a Joint English-History Major or Honours programme. They may do a Double Major by fulfilling all requirements for a major in another department. They may also couple a major in History with an area of concentration in any of the programmes listed under Interdisciplinary Studies, such as: Third World Studies, Chinese Studies, Canadian Studies, Women's Studies.

Joint Honours in English and History

A total of 12 courses are required, i.e.

English: 5 courses including 3 full courses in three different periods (at least two of which should be supported by courses in the History Department bearing some special relationship to them), 1 Shakespeare, and 1 Elective.

History: 5 courses including the 2 which would parallel English courses described above, 2 which would be Honours Seminars, and 1 Elective.

Joint Tutorial

1 course

Elective in Either Department

1 course

Joint Majors in English and History

A total of 9 courses are required, i.e.

English: 4 courses

History: 4 courses

The 9th course is to be selected in consultation with faculty advisors.

As in the honours program, the core of the major should be two courses in one Department supported by two courses in the other bearing a special relationship to them.

Introductory Survey Courses

- 301B THE NATURE AND PRACTICE OF HISTORY. Half Course. R. Tittler
The course embraces two fundamental concerns. Students will examine the nature of historical enquiry: its varieties, purposes, traditions, and place in contemporary society. In addition, they will receive a systematic introduction to the practical aspects of critical scholarship: the use of the library, methods of research, and forms of writing critical essay. Open to students of all departments without prerequisites. Second term.
- 303A HISTORY OF CANADA, PRE-CONFEDERATION. Half Course.G. Decarie (201A) First term.
- 305B HISTORY OF CANADA, POST-CONFEDERATION. Half Course.G. Decarie (201B) A survey of Canadian history through readings, films, tapes, lectures, and discussion. While the instructor's special interest is social history, students will be encouraged to explore other areas of interest to them. The emphasis will be on the development of individual interpretations and opinions rather than on memorization. Second term.
- 306Z HISTORY OF QUEBEC. Full Course. D. Kubesh (253) Social, economic and political history of Quebec from the origins to the present, with emphasis on the period since 1760. Lectures and discussion: 3 hours per week for two terms.
- 308Z NATIVE PEOPLES OF CANADA. Full Course. G. Decarie (281) (Also listed under Interdisciplinary Studies). Examines the Native Canadian experience from a multi-disciplinary perspective. Native and non-Native participants are invited from throughout Canada to speak on history, law, education and culture relating to the Indians and Eskimos of Canada. Term paper or project, and exam. Texts: Walsh, *Indians in Transition*, plus xeroxed articles.
- 310Z HISTORY OF THE UNITED STATES. Full Course. W. Akin (202) Survey of American history from settlement to the mid-twentieth century. The focus of the course is political, but considerable attention is devoted to social, economic, and intellectual movements. Students might read in advance Richard Hofstadter, et al., *The Structure of American History*. Lectures and seminars: 3 hours per week for two terms.
- 320Z GREEK AND ROMAN HISTORY. Full Course. L. Sanders Listed as Classics 330Z and may be taken as either a history or classics course. Lectures: 3 hours per week for two terms.

- 322Z THE ANCIENT WORLD. Full Course. B. Wardy
Listed as Classics 340Z and may be taken as either a history or classics course. Lectures: 3 hours per week for two terms.
- 324Z AN INTRODUCTION TO ARCHAEOLOGY. Full Course. D. Brown
(260) Listed as Classics 434Z and may be taken as either a history or classics course. Lectures: 3 hours per week for two terms.
- 330Z HISTORY OF MEDIEVAL EUROPE. Full Course. R. Coolidge
(205) France, Germany and Italy with occasional reference to neighboring areas, during the period 300 to 1300 A.D. Readings will be assigned from translated primary source material, which will form the basis of class discussions. Students new to medieval history should read C. Warren Hollister, *A Short History of Medieval Europe* either before or during the first weeks of the course. Lectures and discussions: 3 hours per week for two terms.
- 335A HISTORY OF THE RENAISSANCE. R. Tittler
(206) (Not Offered in 1973-74).
- 337B HISTORY OF THE REFORMATION. R. Tittler
(206) (Not Offered in 1973-74).
- 340Z HISTORY OF ENGLAND, 1485 TO THE PRESENT. Full Course. R. Tittler
(207) Emphasis on the development of English society and political structure, with some attention to religious, cultural, and economic development as well. Lectures: 3 hours per week for two terms.
- 351A THE ANCIEN REGIME, 1660-1715. Half Course. C. O'Keefe, S.J.
(210A) First term.
- 353B THE ANCIEN REGIME, 1715-1789. Half Course. C. O'Keefe, S.J.
(210B) An historical survey of this period, and a study of selected themes and problems: the cultural and political supremacy of France; the strength and weakness of absolute government as seen in the reign of Louis XIV; the resurgence of the nobility; unrest and social and economic reform; contemporary appraisals of the ancien regime. Lectures and seminars: 3 hours per week, second term.
- 354Z 19TH CENTURY EUROPE AS SEEN BY THE NOVELIST. G. Adams
(Not Offered in 1973-74).
- 356Z 20TH CENTURY HISTORY AS SEEN IN THE CONTEMPORARY NOVEL. Full Course. G. Adams
A study of the main themes in contemporary history as expressed in the novels of such writers as Remarque, Malraux, Hamsun, Solzhenitsyn, Pasternak, Camus, Mailer.
- 360Z EUROPE IN THE AGE OF THE INDUSTRIAL REVOLUTION. W. Hubbard
Full Course.
An examination of change and stability in the social and economic structure of Europe during the first age of industrialization, ca. 1760 to ca. 1900. The course will investigate such themes as the growth of capitalism, the displacement of a corporate, status society by a society based on economic classes, the growth of industry and cities and their impact on the traditional agrarian order of the ancien regime, and the role of overseas imperialism in the economic development of modern Europe. For advance reading the student might consult D. Landes, *The Unbound Prometheus* (Cambridge UP) or T. Kemp, *Industrialization in Nineteenth*

Century Europe. Lectures and seminars: 3 hours per week for two terms.

- 362Z EUROPEAN SOCIETY AND ECONOMY IN THE TWENTIETH CENTURY: THE CRISIS OF CAPITALISM. Full Course. W. Hubbard
(Not Offered in 1973-74).
- 364Z CENTRAL AND EASTERN EUROPE IN MODERN TIMES, 1740 TO PRESENT. Full Course. W. Hubbard
(264) (Not Offered in 1973-74).
- 366Z FRANCE SINCE 1815. Full Course. G. Adams
(Not Offered in 1973-74).
- 368Z HISTORY OF RUSSIA. Full Course.
(208) (Not Offered in 1973-74).
- 370Z HISTORY OF MODERN CHINA. Full Course. M. Mason
China from Sun Yat-sen to the Cultural Revolution.
- 373A HISTORY OF MODERN JAPAN. Half Course. R. Porter
(Not Offered in 1973-74).
First term.
- 375B HISTORY OF MODERN INDIA. Half Course. R. Porter
(Not Offered in 1973-74).
Second term.
- 376Z INTRODUCTION TO THE HISTORY OF AFRICA. Full Course. M. Mason
(209) This course concerns itself with Africa in the nineteenth century, European Imperialism in the late nineteenth and twentieth centuries, African nationalism and resistance movements and neo-colonialism.
- 381A THE MIDDLE EAST IN WORLD POLITICS. Half Course. H. Habib
(227) Listed as Political Science 455A and may be taken either as a history or a political science course. Lectures: 3 hours per week, first term.
(Not Offered in 1973-74).
- 383B MID-EAST POLITICAL SYSTEMS. Half Course. H. Habib
(227) Listed as Political Science 457B and may be taken either as a history or a political science course. Lectures: 3 hours per week, second term.
(Not Offered in 1973-74).

INTERMEDIATE COURSES

These courses cover geographical or thematic specialties beyond the level presented in the introductory courses. Greater stress is placed on student participation in discussions than on lectures. Prerequisites are normally required.

- 402Z APPROACHES TO CANADIAN HISTORY. G. Decarie
(252) (Not Offered in 1973-74).
- 404Z PROTEST MOVEMENTS IN CANADA SINCE CONFEDERATION. Full Course. M. Vipond
(251) An examination of the social and intellectual origins of political protest in Canada since 1867. Topics will include agrarian revolt, labour organization and sectional discontent, with emphasis on such third parties as Canada First, Progressive Party, C.C.F., Social Credit and Union Nationale. Prerequisite: Canadian history or political science survey. Lectures and discussion: 3 hours per week for two terms.

- 410Z AMERICAN SOCIAL AND INTELLECTUAL HISTORY. Full Course. W. Akin
(Not Offered in 1973-74).
- 411A THE UNITED STATES IN THE 20TH CENTURY: 1919-1941. Half Course.
W. Akin (Not Offered in 1973-74).
- 413B THE UNITED STATES IN THE 20TH CENTURY: 1945 TO PRESENT.
Half Course. W. Akin
(Not Offered in 1973-74).
- 416Z HISTORY OF WOMEN. Full Course.
(259) Thematic and issue-oriented discussion of the problems in women's
history in England and North America since 1800. Prerequisite:
permission of instructor.
- 446Z HISTORY OF BRITISH DIPLOMACY. Full Course. R. Porter
(270) (Not Offered in 1973-74).
- 450Z PROBLEMS OF CHURCH AND STATE IN MODERN EUROPE. Full Course.
(263) C. O'Keefe, S.J. (Not Offered in 1973-74).
- 490Z PHILOSOPHY OF HISTORY. Full Course. R. Hinnens
(280) Listed as Philosophy 396 and may be taken as either a history of
philosophy course. Prerequisite: Open only to University II and III
students. Discussion: 3 hours per week for two terms.
- 497A INDEPENDENT STUDY PROGRAMME. Staff
See Department Chairman for further information.
- 499B INDEPENDENT STUDY PROGRAMME. Staff
See Department Chairman for further information.

ADVANCED SEMINARS: HONOURS COURSES

The following courses are open to honours students in all departments. History majors and students majoring in other departments may take these courses with the permission of the instructor, and providing they have completed an introductory course in the same area.

- 502Z PROBLEMS IN CANADIAN INTELLECTUAL HISTORY. Full Course.
(301) M. Vipond
A study of social and political thought, with emphasis on nationalism in
both English and French Canada. Seminars: 2 hours per week for two
terms.
- 504Z THE CITY IN CANADIAN HISTORY. Full Course. G. Decarie
(334) A study of urban development. For the first term, study will be devoted
to world urban history. In the second term, study will concentrate on
urban history in Canada. Students will have an opportunity to carry out
original research in areas of interest to them. Seminars: 2 hours per week
for two terms.
- 510Z PROBLEMS IN AMERICAN HISTORY. Full Course. W. Akin
(318) An intensive study of selected themes in recent American history,
emphasis on historiography, social and intellectual history. Seminars: 2
hours per week for two terms.
- 520Z JULIUS CAESAR AND ALEXANDER THE GREAT. Full Course. D. Brown
(325) Listed as Classics 432 and may be taken either as a history or classics

course. Seminars: 3 hours per week for two terms.

- 530Z PRIESTHOOD AND POLITICS IN THE MIDDLE AGES. Full Course. R. Coolidge
(303) A study of the working out in practice, in the relations between the
holders of temporal and spiritual power, of the medieval concepts of
sacerdotium and *imperium*. Seminars: 2 hours per week for two terms.
- 542Z TUDOR ENGLAND. Full Course. R. Tittler
(311) A study of the political, religious and social problems of the Tudor Age
(1485-1603). The seminar will consist of regular discussions and individual
research papers, centered around the broad themes of the age. It is hoped
that students will be able to use primary as well as secondary sources.
Offered every other year, alternately with History 544Z. Seminars: 2 hours
per week for two terms.
- 544Z RELIGIOUS DISSENT AND SOCIAL PROTEST IN THE ENGLISH
(333) TRADITION. Full Course. R. Tittler
(Not Offered in 1973-74).
- 550Z THE AGE OF THE ENLIGHTENMENT, 1685-1789. Full Course.
(310) C. O'Keefe, S.J.
A study of the European Enlightenment with emphasis on its
development in France; the main themes in the movement will be
explored, e.g. nature, reason, tolerance, progress, happiness, etc.; the
careers of the leading philosophers and their chief writings will be
examined. Various reactions to the Enlightenment in the eighteenth and
nineteenth centuries will be studied. Seminars: 2 hours per week for two
terms.
- 552Z THE FRENCH REVOLUTION AND NAPOLEON. Full Course. G. Adams
(307) An examination of the socio-economic, political and religious changes in
French society between 1787 and 1815. Seminars: 2 hours per week for two
terms.
- 554Z THE REVOLUTIONARY TRADITION IN 19TH CENTURY FRANCE.
(306) Full Course. G. Adams
(Not Offered in 1973-74).
- 560Z STUDIES IN 19TH CENTURY CENTRAL EUROPE: THE ERA OF
(305) BISMARCK. Full Course. W. Hubbard
(Not Offered in 1973-74).
- 562Z STUDIES IN 20TH CENTURY CENTRAL EUROPE: FASCISM AND
(317) COMMUNISM. Full Course. W. Hubbard
Problems in the modernization of the socio-economic and political order
in Central and Eastern Europe following the dissolution of the Habsburg
and Hohenzollern empires. Special attention will be paid to the role of
fascism and communism in promoting social change. For advance reading
students might consult R. Dahrendorf, *Society and Democracy in
Germany* (Anchor, 1969) and H. Seton Watson, *Eastern Europe,
1918-1941* (Harper Torchbook, 1970). Seminar: 2 hours per week for two
terms.
- 564Z PROBLEMS IN THE SOCIO-ECONOMIC HISTORY OF MODERN EUROPE.
(Not Offered in 1973-74). W. Hubbard
- 570Z EAST ASIA TODAY (CHINA AND JAPAN). Full Course. R. Porter
(314) (Not Offered in 1973-74).

Arrangements can be made for students wishing to take an advanced course on China in 1973-74. Please consult the Department Chairman.

572Z SOUTH ASIA TODAY (INDIA AND VIETNAM). Full Course. R. Porter
(Not Offered in 1973-74).

574Z COLONIALISM AND NEO-COLONIALISM IN AFRICA. Full Course. M. Mason
(320) (Not Offered in 1973-74).

576Z IMPERIALISM AND REVOLUTION IN AFRICA, ASIA AND LATIN AMERICA. Full Course. M. Mason
A comparison of the techniques and effects of imperialism in Asia, Africa and Latin America during the late 19th and 20th centuries. Modern independence and revolutionary movements in these areas will be examined from a comparative perspective. Seminars: Two hours per week for two terms.

580Z MAN IN CONTEMPORARY SOCIETY. Full Course. Staff
(308) A reading and discussion course on the key intellectual, social and political trends of the 20th century. Emphasis is placed on an interdisciplinary approach to such topics as political elites, nationalism, etc. Further information may be obtained from the Department Chairman.

590Z- JOINT HISTORY-ENGLISH TUTORIAL. Staff
01 A tutorial conceived as an interdisciplinary effort between the Departments of History and English, and designed specifically to satisfy a requirement for the History-English joint honours program. Professors Tittler (History) and Martin (English) are faculty co-ordinators, though tutorials may be arranged with virtually any member of the respective departments.

594Z SPECIAL STUDIES: THE ECONOMIC SOURCES AND IMPACT OF BRITISH IMPERIALISM IN THE 19TH CENTURY. Full Course. Staff
An investigation of the economic and social structure of British foreign investment or entrepreneurial activity and the effect of this activity on the economic and social structure of the territories involved. Special emphasis will be placed on Canada, Central Europe, Africa and the West Indies. Prerequisite: Faculty permission. (Mason, Vipond or Hubbard). Seminars: will be held fortnightly.

596Z HONOURS HISTORY TUTORIAL. Full Course. Staff
(400) The history tutorial is open to honours students only. All honours students in history must select an area of concentration from the list below, and a tutorial director. The tutorial director will supervise an intensive reading program in the student's area of special interest, and consult with the student individually to discuss his reading program:

- 01 North American History
- 02 British History
- 03 Ancient History
- 04 European History, 400-1660
- 05 European History, 1660 to the present
- 06 The Third World

598Z HONOURS HISTORY THESIS. Full Course. Staff
(500) Optional project open to honours students only. At the end of the second year students must choose, in consultation with their tutorial director, a research topic for intensive analysis during the third year. The student will independently research the topic and present a paper at the end of the third year. Students may concentrate in the same areas of concentration as for History 596Z.

Interdisciplinary Studies

Acting Director: S.E. McEvenue

Students may take a SELF-ELECTED MAJOR or CONCENTRATION in various areas.

SELF-ELECTED MAJOR:

Students who would like to design a self-elected major to suit their individual interests (studying problems or areas which cut across departmental lines) are invited to do so in consultation with the Director of the Centre.

The following self-elected major programmes are organized by the Centre. Students are asked to contact the coordinator for further information about these programmes, or in order to register in them:

Canadian Studies — M. Danis
Drama — P. Spensley
Quebec Community Development — P. Babarik

CANADIAN STUDIES:

The student will be required to take not less than seven credits obtained in courses deemed to have Canadian content as approved by the Co-ordinator of the Programme. Students are advised to take courses at the 300 level in their first year.

The seven required courses will be taken over the three-year programme as follows:

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Canadian Studies	Canadian Studies	Canadian Studies
Canadian Studies	Canadian Studies	Canadian Studies
Elective	Elective	Elective
Elective	Elective	Canadian Studies
Elective	Elective	Elective

The student will be required to take a minimum of one course offered by the Department of French with the approval of the Canadian Studies co-ordinator in consultation with the Chairman of the French Department.

The student will also be required to submit and defend a research project in an area of his choice during his graduating year.

Students must take the following courses and four of a selection of fifty offered by the various disciplines and departments:

English 454Z	—	Canadian Literature (a survey course)
French	—	to be decided with the programme co-ordinator in consultation with the Chairman of the French Department.
History 303A	—	History of Canada
History 305B	—	History of Canada
Political Science 320Z	—	Canadian Government and Politics

Drama: To be announced.

Quebec Community Development:

Students may take a concentration or a self-elected major in this programme, but it is recommended that they do so in conjunction with a Major in either Sociology, Political Science, Economics, or Psychology. The programme is designed to educate and train a student to become a civilian generalist, either as a community development consultant to community leadership and organizations, or as a community leader. It is to be an *applied* social science, relating theory to the concrete reality of Quebec. This will demand of the students that they acquire an ability to speak and understand French, and some familiarity with life styles other than those of the English urban middle class.

For a self-elected major eight courses will be required over three years. The courses will be selected in consultation with Professor Babarik.

CONCENTRATIONS:

In conjunction with a major or honours programme in various departments, students may register for a Concentration within any of the Major programmes listed above, or in one of the following programmes, after consultation with the organizer.

Chinese Studies — R. Porter
Civilization: The Tradition of the Western World before 1700
— R. Wareham
The Third World — M. Mason
Women's Studies — S. Drysdale

PROGRAMME DETAILS

Students may choose from the following courses:

Chinese Studies:

History: 370Z — A History of China
570Z — East Asia Today

Political Science: 441A — Contemporary Politics of China
542Z — Seminar on Asian Communism

Economics: 307B — The Chinese Economy

Classics: 373A — Chinese Mythology

Philosophy: 492Z — Chinese Philosophy

Further courses in Chinese language and history are available at Sir George Williams, McGill, and Université du Québec.

Civilization:

The Tradition of the Western World before 1700.

Students who register for this programme will be registered for a Major or Honours Programme in one of the following departments: Classics, English, French, History, Modern Languages, Philosophy, Theological Studies.

They will further be required to participate in the Seminar in Civilization listed as Interdisciplinary Studies 380Z during each of their three years.

Finally they will be required to choose 6 courses which treat the period prior to 1700: 3 courses within their Major or Honours programme, and 3 outside it. There are over 80 such courses to choose from and the choice may be made in consultation with Professor Wareham.

Third World Studies:

Interdisciplinary Studies 350Z — An Introduction to the Third World
550Z — Third World Studies Seminar

Economics: 401A — Theories of Economic Growth
403B — Planning for Economic Growth
539B — Economics of Social Welfare

Sociology: 421A — Sociology of Economic Development
562 — Capitalism and Underdevelopment

Political Science: 441A — Contemporary Politics in China
450Z — African Government and Politics
455A — The Middle East in World Politics
457B — Mid-East Political Systems
542Z — Seminar on Asian Communism

Philosophy: 492Z — Chinese Philosophy

History: 370Z — Modern China
373A — Modern Japan
375B — Modern India
376Z — Introduction to the History of Africa
570Z — East Asia Today
576Z — Imperialism and Revolution in the Third World
594Z — Special Studies: The Economic Sources & Impact of British Imperialism.

Women's Studies:

Interdisciplinary Studies: 320Z — Comparative Literature: Women in 19th and 20th Century Literature
410Z — Social Change: Women in Modern Society
540Z — Third Year Seminar in Women's Studies.

Sociology: 314Z — Marriage and the Family
506Z — Sociology of Women

English: 337A — Women and Literature

Classics: 386Z — Women in Classical Antiquity

History: 416Z — History of Women

Theology: 325Z — Marriage

Canadian Studies: Students may take the following Majors with a Concentration in Canadian Studies:

SOCIOLOGY

Canadian Studies Co-ordinator: J. Tarlo

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Sociology (required)	Sociology (required)	Sociology (required)
Sociology (elective C.S.)	Sociology (elective)	Sociology (elective)
Elective	Sociology (elective)	Elective
Elective	Elective	Elective
Elective	Elective	Elective

- * Seven of the above Sociology courses and Electives must be in Canadian Studies. They will be decided upon in consultation with the Canadian Studies Co-ordinator and the Chairman of the Department.

HISTORY

Canadian Studies Co-ordinator: M. Vipond

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
History*	History	History
History	History	History
Elective**	Elective	Elective
Elective	Elective	Elective
Elective	Elective	Elective

- * Four of the six history courses must be in Canadian studies. These four must include the Canadian survey course, one Canadian history course at the intermediate level, and one seminar in Canadian history.

- ** Two of the nine electives must be in Canadian studies. These two courses must be in two separate departments.

ECONOMICS

Canadian Studies Co-ordinator: N. Islam

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Economics (required)	Economics (required)	Economics (required)
Economics (elective)	Economics (elective)	Economics (elective)
Elective	Economics (elective)	Elective
Elective	Elective	Elective
Elective	Elective	Elective

- * Seven of the above Economics and Electives must be in Canadian Studies. To be decided after consultation with the Canadian Studies Co-ordinator and the Chairman of the Department.

ENGLISH

Canadian Studies Co-ordinator: E. Buitenhuis

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
English (required)	English (required)	English (required)
English	English	English
English	Elective	Elective
Elective	Elective	Elective
Elective	Elective	Elective

- * Seven of the above English courses and Electives must be in Canadian Studies, one of which must be the Canadian Literature survey course (454). The others will be selected in consultation with the Canadian Studies Co-ordinator and the Chairman of the English Department.

FRENCH

Canadian Studies Co-ordinator: L.W. Sugden

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
French 310Z or 312Z	French 421	French 572Z (C.S.)
French 360Z, 364Z, 368Z (C.S.)	French 423, 425	French 540Z, 542Z, 544Z
French	French 432Z	Elective
Elective	Elective	Elective
Elective	Elective	Elective

- * Seven of the above French courses and Electives must be in Canadian Studies. They will be selected in consultation with the Canadian Studies Co-ordinator and the Chairman of the French Department.

POLITICAL SCIENCE

Canadian Studies Co-ordinator: E. Price

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Poli. Sci. 320Z	Poli. Sci. (required)	Poli. Sci. (required)
Poli. Sci. (elective)	Poli. Sci. (elective)	Poli. Sci.
Elective	Elective	Poli. Sci.
Elective	Elective	Elective
Elective	Elective	Elective

- * Seven of the above Political Science courses and Electives must be in Canadian Studies. They will be selected in consultation with the Canadian Studies Co-ordinator and the Chairman of the Political Science Department.

300Z MENTAL TECHNIQUES. Full Course. B. Cavanaugh & Staff
This course is concerned with the direct training of individual students in various mental techniques. The *aim* of the course is to foster the development of the student's level and quality of mental functioning. The mental functions dealt with *range* from individual techniques, e.g. logic, through small group functions, e.g., predictive analysis, to large group functions, e.g., organization systems analysis. The *means* employed include lectures, texts, small work groups, tapes, problem solving and several levels of games (which are played in special lab sessions). Lectures and Labs: 5 hours per week for two terms.

310Z COMPARATIVE LITERATURE. Full Course. M. Andersen
(Not Offered in 1973-74).
The hero, the anti-hero; their quests. Lectures: 3 hours per week, for two terms.

320Z COMPARATIVE LITERATURE. Full Course M. Andersen
(Offered in the Evening Division)
Women in 19th and 20th Century Literature. Designed to enlighten women in their search for themselves and to help men in their attempt to understand women, the course will show women as seen by both female and male writers. The student will see women in different periods, different countries, different social milieux, while examining at the same time a variety of literary styles and trends. If possible both English and French will be used as the languages of instruction. Lectures: 3 hours per week for two terms. Text: Virginia Wolfe, *To the Lighthouse*; Montherlant, *Pitié pour les femmes*; Lessing, *Minna von Barnhelm*; Mme de Lafayette, *La Princesse de Clèves*; Kleist, *Das Käthchen von*

Heilbronn, Balzac, *La Femme de trente ans*; Flaubert, *Madame Bovary*; Ibsen, *The Doll's House*; Strindberg, *The Father*; Henry James, *Portrait of a Lady*; S. de Beauvoir, *"Mémoires d'une jeune fille rangée"*; Doris Lessing, *"The Golden Notebook"*; Margaret Atwood, *The Edible Women*; Anne Hébert, *Kamouraska*.

- 322Z LITERATURE AND EVIL. Full Course. R. Martin
(Not Offered in 1973-74).
The subject of EVIL in French and English Literature. Consideration of the problem from the historical, philosophical, moral, and aesthetic points of view. Readings in authors including Choderlos De Laclos, The Marquis De Sade, La Fontaine, Jean Genet, Thomas De Quincey, Edgar Allen Poe, Hawthorne and others. A reading knowledge of French and English is required. Lectures: 3 hours per week for two terms.
- 324Z LITTERATURE COMPAREE – COMPARATIVE LITERATURE: LITTERATURES CANADIENNES – CANADIAN LITERATURES. Full Course. L.W. Sugden
Etude comparée des littératures canadiennes d'expression française et d'expression anglaise. Existe-t-il une seule littérature canadienne dans les deux langues ou, en réalité y-a-t-il deux littératures séparées au Canada? Comparative study of French and English Canadian Literature. Is there only one literature in two languages or has Canada produced two distinct and separate Literatures? Lectures: 3 hours per week for two terms.
Texts: *Beautiful Losers* – Leonard Cohen; *Heaven of Malice* – Robertson Davies; *Stone Angel* – M. Lawrence; *Trente Arpents* – Ringuet; *Bonheur d'occasion* – Gabrielle Roy; *Mon Fils pourtant heureux* – Simard; *Trou de mémoire* – Aquin; *La guerre, yes sir!* – Roch Carrier; *Une Saison dans la vie d'Emmanuel* – Marie-Claire Blais; *Settlers of the Marsh* – Grove; *They Shall Inherit The Earth* – Callaghan; *The Watch that Ends the Night* – Hugh MacClennan.
- 330Z ENVIRONMENTAL STUDIES. Full Course. R. Pallen & Staff
(Offered in the Evening Division)
The course is designed to provide a general background of the scientific and sociological nature of man's relationship to his environment. Each lecture will attempt an in-depth treatment of a specific aspect of the environmental issue, and will be presented by an invited specialist in that field. The course will present an overall view of the general problems followed by a serious analysis of specific areas of concern, such as the pollution of water, air and soil; noise pollution; the oceans; energy resources and population. Possible solutions for the restoration and preservation of our environment will be discussed and the associated social, political and economic considerations will be presented. The general content of the lectures, where applicable, will be directed to problems in our city and province. The presentation of material will include lectures, discussion groups, films and panel discussions. Readings on the various topics will be assigned and students will be involved in projects and term papers. Lectures: 3 hours per week for two terms.
- 350Z AN INTRODUCTION TO THE THIRD WORLD. Full Course. M. Mason & Staff
While this course is designed to provide an interdisciplinary background to students enrolled in the Third World Studies Programme, it is open to all students of Loyola College, irrespective of faculty. The course will be divided into four six-week units under the headings of Political Science, History, Sociology and Economics. There are no prerequisites for this course. Lectures: 3 hours per week for two terms. (Not Offered in 1973-74).

- 360Z SCIENCE AND CULTURAL CRISIS. Full Course. M. Hogben, D. O'Connor & Guest Lecturers
This course will attempt to develop a framework for responding to problems posed by recent and projected achievements in the sciences, especially the life sciences. Our thesis is that scientific break-throughs have precipitated a crisis, or series of crises, with respect to man's self-understanding, his relations to his fellow man, and his relations with nature. Our aim will be to understand the historical and intellectual roots of these crises and to formulate responses which grow out of scientific-philosophic dialogue. Topics will include: Objectivity: scientific, philosophic; Alienation and the "two cultures"; D.N.A. and being human; Death with dignity; Biogenetic engineering; the "right" to privacy; the difficulty of dialogue. Lectures: 3 hours per week for two terms.
- 370Z "THREE QUARKS FOR MUSTER MARK". Full Course. C.S. Kalman, L. Hallett
A course for science and arts majors which will attempt to elucidate the inter-action between scientific and cultural developments throughout history and in the present day. Using works by various philosophers, scientists and creative writers, we will trace the continuing dialogue between science and the arts and its relevance for man's attitude toward himself and his world. Lectures: 3 hours per week for two terms. Text: *Physics and Its Fifth Dimension Society*; D. Schroeder, Addison, Wesley, Reading, Mass., 1972.
- 380Z CIVILIZATION I. Full Course. R. Wareham
A seminar given in conjunction with the programme "The Tradition of the Western World before 1700". Lectures: 3 hours per week for two terms.
- 400Z SOCIAL CHANGE: THE NATIVE PEOPLES OF CANADA. Full Course. A. Valaskakis & Staff
(Offered in the Evening Division).
Examines the crisis of the native people of Canada from a multidiscipline perspective. Participants shall include not only the Loyola Community but Indian and White experts from throughout Canada, and a strong contingent of Indians from the Montreal area. The course attempts to set forth the magnitude of this crisis and ends by asking how the native peoples will be able to control their own lives and future. Guest speakers are invited from across Canada. Lectures: 3 hours per week for two terms.
- 410Z SOCIAL CHANGE: WOMEN IN MODERN SOCIETY. Full Course. M. Andersen & Staff
(Not Offered in 1973-74).
An interdisciplinary course designed to explore the changing role of women in nineteenth and twentieth century society. The subject will be approached with the assistance of lecturers from various disciplines such as history, theology, philosophy, sociology, economics, psychology and the arts. Classes will consist of lectures, panel discussions and seminars. Lectures: 3 hours per week for two terms.
- 540Z SEMINAR IN WOMEN'S STUDIES. Full Course. Staff of Women's Studies
(Not offered in 1973-74).
This is a third year interdisciplinary seminar on selected themes related to women in society, utilizing the perspectives of a number of academic disciplines. Prerequisite: Open to all students in the third year of a Concentration in Women's Studies. Lectures: 3 hours per week for two terms.

Library Science

Co-ordinator: M. Wilson

A Major in Library Science is offered in the Evening Division.

Students wishing to take Library Science as a major, or as an individual course elective should consult the 1973-74 Evening Division Calendar.

Mathematics

Chairman: J. Soric

Courses leading to a B.A. with a Major in Mathematics.

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Mathematics 321 A/B	Mathematics 326Z	Mathematics 436Z
or	Mathematics 353A	Mathematics Elective
Mathematics Elective (½)	Mathematics 451B	Mathematics Elective
Mathematics 323B	Elective	Elective
Mathematics 334Z	Elective	Elective
Mathematics 340Z	Elective	
or		
Mathematics 402Z		
Elective		
Elective		

NOTES:

1. *Cognate Electives* are to be chosen after consulting the Department Chairman. The course would normally be one in which Mathematics is applied, e.g. physics, computer science, etc.
2. Students who intend to follow a Mathematics Program in University are recommended to take Mathematics 131A, 131B, 232 (or their equivalent) at the collegial level.
3. A student wishing to major in Mathematics but not meeting these requirements should consult with the Department Chairman.
4. Students who have taken Mathematics 321 (introductory linear algebra) or its equivalent at the collegial level, have a Mathematics elective (half course) in its place. Students without a collegial half course in linear algebra take Mathematics 321 in University I.
5. By a careful choice of electives students can select whether the emphasis of the program will be in the area of pure or applied Mathematics.

Honours and Majors Math.

6. Students entering University III in September '73 will take the same required courses as those described in the '72-'73 Calendar. However, their electives can be chosen from the new and old elective course offerings. General students take Math 353A and Math Elective (1/2) instead of Math 434Z.
7. Students entering University II Honours Math in September '73 must take Math 353A (Differential Equations (1/2) instead of Math Electives (1/2).

300Z IDEAS IN MATHEMATICS. Full Course. R. Smith
The course endeavours to reveal the extent and power of mathematics and to give some insight into its historical development. The topics chosen will be presented in a way that requires a minimal mathematics background. This course has no formal prerequisites and does not serve as a prerequisite for any other course in mathematics. Students should consult with the professor before registering for this course. Lectures: 3 hours per week for two terms.

- 301 A/B ELEMENTARY STATISTICS. Half Course. D. Kachroo
Empirical frequency distributions and descriptive measures; Elementary Probability; Populations, samples and theoretical distributions; Sampling distributions; Estimation of confidence intervals; Tests of hypotheses; two sample techniques; tests for goodness of fit; Regression and correlation; Analysis of variance. Lectures: 3 hours per week, first or second term. Text: *Introduction to Probability and Statistics*, (3rd Edition) by William Mendenhall.
- 303A PROBABILITY FOR ENGINEERS. Half Course. R.C. Moore
Probability Theory; special distribution; binomial, Poisson, Normal, Gamme and Beta distributions. Sampling distributions. Lectures: 3 hours per week, first term.
- 312Z DIFFERENTIAL EQUATIONS. Full Course. M. Faierman
Special methods for first order ordinary differential equations. Application of first order equations. Linear differential equations with constant coefficients. Applications of second order linear differential equations. Power series solutions. Systems of linear equations. The Laplace Transform. Non-linear differential equations. Boundary value problems. Prerequisite: Mathematics 114Z. Lectures: 2 hours per week for two terms.
- 315A ENGINEERING MATHEMATICS. Half Course. T. Srivastava
Fourier series. Laplace Transform. Gamma, Beta, Lengendre and Bessel functions. Jacobians. Transformations in multiple integrals. Introduction to partial differential equations. Prerequisite: Mathematics 114Z. Lectures: 3 hours per week, first term.
- 317B MATHEMATICS FOR ENGINEERS & PHYSICISTS. Half Course. T. Srivastava
Vector analysis. Line and surface integrals. Divergence and Stokes theorems. Complex analysis; analytic functions. Cauchy theorem. Cauchy's integral formula. Taylor and Laurent expansions. Cauchy Residue theorem. Contour integration. Simple transformations. Prerequisite: Mathematics 114Z or 232. Lectures: 3 hours per week, second term.
- 321 A/B INTRODUCTION TO LINEAR ALGEBRA. Half Course M.V. Bobetic, D. Kachroo
Systems of equations. Vector spaces. Matrices. Linear transformations, Determinants. Lectures: 3 hours per week, first or second term. Text: O'Nan, *Linear Algebra*.
- 323B LINEAR ALGEBRA. Half Course. E. O'Connor, S.J.
Vector spaces, bases, dimension. Linear mappings. Matrices and linear operators. Eigenvalues and eigenvectors. Canonical forms. Inner product spaces. Prerequisite: Mathematics 321A or 321B, or equivalent. Lectures: 3 hours per week, second term. Text: O'Nan, *Linear Algebra*.
- 326Z ALGEBRA I. Full Course. H. Kim
Theory of groups, subgroups, 1st sylow theorem and normal subgroups. Commutator subgroups. Permutation groups, generated subgroups. Quotient groups and Lagrange's theorem. Homomorphisms, p-groups and the class formula. Elementary properties of rings, integral domains and fields. Ideals and Quotient rings. Examples of non-commutative rings. Ring homomorphisms. Polynomial rings and factorization. Field of quotients and other selected topics. Lectures: 3 hours per week for two terms.

- 332Z ADVANCED CALCULUS. Full Course. (For Chemistry Students). M. Faierman
Differential equations; limits and continuity; multiple integrals; Green's, Stoke's, Gauss theorems; series; improper integrals and Laplace transform. Prerequisite: Mathematics 232Z. Lectures: 3 hours per week for two terms.
- 334Z ADVANCED CALCULUS. Full Course. M.V. Bobetic, T.N. Srivastava
Functions of several variables, limits, continuity, partial derivatives, maxima and minima, extremal problems with constraints, differentiability, Taylor's series, double and triple integrals, curves and surfaces, line and surface integrals, Green's theorem and Stoke's theorem. Prerequisite: Mathematics 232Z. Lectures: 3 hours per week for two terms. Text: *Advanced Calculus* by A. Taylor (Ginn).
- 336Z CALCULUS. Full Course. (for non-science students)
Limits of functions, differentiation and integration of polynomials with applications; second derivative and differentiation of algebraic, exponential and logarithmic functions, curvature, definite integral. Differentiation and integration of trigonometric functions; methods of integration; improper integrals; application of the definite integral; partial derivatives; multiple integrals; expansion of functions. Prerequisite: Mathematics 101 or its equivalent. Lectures: 3 hours per week for two terms. Text: *Analytic Geometry and the Calculus* by Goodman (MacMillan).
- 340Z NUMERICAL METHODS. Full Course. R. Smith
The course is designed to acquaint the student with standard numerical methods and their mathematical foundations. Evaluation of polynomials and their derivatives. Linear approximations. Zeros of functions. Basic sets of polynomials. Polynomial approximations. Numerical differentiation and integration. Gaussian quadrature. Method of undetermined coefficients. Ordinary differential equations. Systems of linear algebraic equations. Matrix inversion. Prerequisite: Mathematics 232Z. Lectures: 3 hours per week for two terms.
- 353A ORDINARY DIFFERENTIAL EQUATIONS I. Half Course. A. Keviczky
First order differential equations. Linear differential equations with constant and variable coefficients. Sturm-Liouville problems. Green's function. Prerequisite: Mathematics 232Z. Lectures: 3 hours per week, first term. Text: *Elementary Differential Equations* by Kreider, Kuller & Ostberg (Addison & Wesley).
- 371A INTRODUCTION TO LOGIC. Half Course.
Logic and Language. Propositional calculus. Validity and invalidity. Formal proofs. Propositional functions and quantifiers. Predicate calculus. Metamathematics. Lectures: 3 hours per week, first term.
- 373B SET THEORY. Half Course.
Elementary properties of sets, relations and functions. Equivalence relations. Axiom of choice and equivalent conditions. Ordinal and cardinal numbers. Lectures: 3 hours per week, second term. Text: *Naive Set Theory* by Halmos.
- 375B INTRODUCTION TO COMBINATORIAL MATHEMATICS. Half Course.
Elementary Graph Theory. Permutations and combinations. Principle of exclusion and inclusion and its applications; various combinatorial problems, recurrence relations. Lectures: 3 hours per week, second term.

- 377B INTRODUCTION TO GAME THEORY. Half Course.
(Not Offered in 1973-74).
Matrix games. Strategies. Optimum strategies and the value of a game. Strictly determined games. Non-strictly determined games and linear programming. Applications. Further material according to interest of instructor and students. Lectures: 3 hours per week, second term.
- 402Z STATISTICS I. Full Course. R.C. Moore
Probability and statistics; frequency distributions, probability, binomial normal and Poisson Laws, sampling theory. Curve fitting, distribution of chi-squares, F and T; Testing of hypothesis, Quality control, regression theory; analysis of variance, Introduction to experimental design. Prerequisite: Mathematics 232Z. Lectures: 3 hours per week for two terms. Text: *Mathematical Statistics* by Freund (Prentice Hall).
- 426Z ALGEBRA II. Full Course. H. Kim
Advanced topics in group theory including sylow theorems. Fundamental theorem of finitely generated abelian groups, composition series. Galois' theorem for permutation groups. Introduction to field theory; normal and separable extensions, Galois theory and unsolvability of the Quintic. Prerequisite: Mathematics 326Z. Lectures: 3 hours per week for two terms. Text: *First Course in Abstract Algebra* by Fraleigh (Addison & Wesley).
- 436Z REAL ANALYSIS. Full Course. E. O'Connor, S.J.
The Real number system, Dedekind cuts, metric spaces, sequences, series, convergence tests, limits of functions, continuity, the Bolzano-Weierstrass theorem, derivatives, Taylor's Theorem, functions of bounded variation, Riemann-Stieltjes integral, sequences and series of functions, uniform convergence. Prerequisite: Mathematics 334Z. Lectures: 3 hours per week for two terms. Text: *Principles of Mathematical Analysis* by Rudin.
- 451B COMPLEX ANALYSIS I. Half Course. M. Faierman
Roots of a complex number. Functions, limits and continuity. Branch points; analytic functions; Cauchy-Riemann equations; singular points; Complex integration; Green's formula, Liouville theorem. Taylor's and Laurent's theorem. Theory of Residues. Evaluation of integrals. Selected topics. Prerequisite: Mathematics 334Z. Lectures: 3 hours per week, second term.
- 471A PROJECTIVE GEOMETRY. Half Course. M. Lorimer
Basic definitions and results; collineations; affine planes; perspectivities; Desargues and Pappus postulates and Hessenburg's theorem. Incidence Matrices of finite projective planes and orthogonal Latin squares. Coordinates in projective planes; examples of non-Desarguesian projective planes. Prerequisite: Mathematics 326Z. Lectures: 3 hours per week, first term.
- 473B ORDINARY DIFFERENTIAL EQUATIONS II. Half Course. A. Keviczky
(Not Offered in 1973-74).
Linear differential equations with analytic coefficients. Frobenius method for linear differential equations at a regular singular point; Laplace transforms. Existence and uniqueness theorems. Prerequisite: Mathematics 353A. Lectures: 3 hours per week, second term. Text: *Elementary Differential Equations* by Kreider, Kuller & Ostberg (Addison & Wesley).
- 502Z STATISTICS II. Full Course. R.C. Moore
Analysis of variance, correlation, regression. Introduction to experimental design. Multivariate normal distribution. Linear Models. Prerequisite: Mathematics 402Z. Lectures: 3 hours per week, for two terms.

- 526Z ALGEBRA III. Full Course. H. Kim
Rings and Modules, structure of groups, lattices, categories and functors and multi-linear algebra. Prerequisite: Mathematics 426Z. Lectures: 3 hours per week for two terms. Text: *Algebra* by MacLane and Birkhoff (MacMillan).
- 536Z REAL AND COMPLEX ANALYSIS. Full Course. E. O'Connor, S.J.
(Offered in 1973/74 only).
The Lebesgue integral and the classical problems it lays to rest. An exploration of more general theories of measure and integration in view of their mathematical clarifications or their applications. An introduction to the theory of functions of a complex variable through its principle classical theorems with some of their recent modifications. Prerequisite: Mathematics 436Z. Lectures: 3 hours per week for two terms.
- 535A MEASURE THEORY AND INTEGRATION. Half Course.
(Not Offered in 1973/74).
The Lebesgue integral and the classical problems it lays to rest. An exploration of more general theories of measure and integration in view of their mathematical clarifications or their applications. Prerequisite: Mathematics 436Z. Lectures: 3 hours per week, first term.
- 540Z NUMERICAL ANALYSIS. Full Course. R. Smith
Polynomial approximation. Interpolation; numerical differentiation quadrature and summation; numerical solution of ordinary differential equations. Functional approximations. Least square techniques. Solutions of non-linear equations. Solutions of simultaneous linear equations, calculation of Eigenvalues and Eigenvectors of matrices. Prerequisite: Mathematics 340Z or special permission of the professor. Lectures: 3 hours per week for two terms. Text: *A First Course in Numerical Analysis* by A. Ralston (McGraw-Hill).
- 551B COMPLEX ANALYSIS II. Half Course.
(Not Offered in 1973/74).
Analytic continuation. Maximum modulus theorem and its application. Argument principle. Rouché's theorem. Conformal mapping. Entire functions. Prerequisite: Mathematics 451A.
- 560Z TOPOLOGY. Full Course. J. Soric
(Offered in 1973/74 only).
Metric spaces, topological spaces, products of spaces, compactness, separation axioms, connectedness, approximation. Banach spaces, Hilbert spaces. Prerequisite: Mathematics 436Z or permission of the instructor. Lectures: 3 hours per week for two terms. Text: *Introduction to Topology and Modern Analysis* (Simmons).
- 567A TOPOLOGY. Half Course.
(Not Offered in 1973/74).
Topological spaces, neighbourhoods, subspaces, continuous functions, compactness, connectedness, separation axioms, approximation. Prerequisite: Mathematics 436Z. Text: *Introduction to Topology & Modern Analysis* by Simmons (McGraw-Hill).
- 571B ALGEBRAIC TOPOLOGY. Half Course.
(Not Offered in 1973/74).
Homotopy theory. Fundamental groups, classification and polygon representation of the topological surfaces. Orientability. Handles and cross caps. Triangulation, simplexes, chains and normal forms. Homology theory. Prerequisite: Mathematics 326Z, 567A. Lectures: 3 hours per week, second term.

- 575 SENIOR THESIS. Half Course.
A/B Under special circumstances, approval will be given to undertake a research problem requiring independent work. The results will be directed and evaluated by a member of the department. Prerequisite: Approval of the Department Chairman.
- 577B FUNCTIONAL ANALYSIS. Half Course.
(Not Offered in 1973/74).
A short review of some of the algebraic concepts, Banach space; definitions and examples, continuous linear transformations. Hahn-Banach theorem. The natural embedding of N into N^{**} . Hilbert spaces: definitions and examples. Orthonormal sets, the conjugate space H^* . The adjoint of an operator. Self adjoint operators. Normal and unitary operators. Projections. Finite dimensional spectral theory. Prerequisite: Mathematics 567A.
- 579B CALCULUS OF VARIATIONS. Half Course. M. Bobetic
Euler Lagrange equation. Legendre and Jacobi conditions, the E-function; Hilbert's invariant integral. Hamilton-Jacobi theory. Introduction to optimal control problems. Introduction to direct methods and partial differential equations. Prerequisite: Mathematics 334Z. Lectures: 3 hours per week, second term.
- 581A NUMBER THEORY. Half Course.
(Not Offered in 1973/74).
Arithmetical functions $d(n)$, $\sigma(n)$, $\phi(n)$ and their formulas. Mersenne numbers, perfect numbers. Congruences; Fermat theorem. Euler-Fermat theorem; Wilson's theorem. Divisibility properties of products of consecutive integers. Linear and quadratic congruences. Law of quadratic reciprocity. Mobius functions. Mobius inversion formula. Gauss theorem on $\phi(n)$. Gauss theorem on primitive roots. Text: *Topics in Number Theory* by LeVeque, Vol. 1.
- 592Z MECHANICS. Full Course.
(Also listed as Physics 414).
Review of Vector Calculus. Kinematics of Particle Motion. Moving Coordinate Systems. One Dimensional Motion. Introduction to Lagrange's and Hamilton's Equations of Motion. Conservative Motion with emphasis on central forces. Systems of Particles Rigid Bodies. Emphasis will be on illustrating the method of attacking physical problems and the mathematical tools used in solving them. Prerequisite: 1 full Physics course and 2 full courses in Calculus. Lectures: 3 hours per week for two terms. Text: *Introduction to the Principles of Mechanics* by Hauser (Addison Wesley).
- 594Z METHODS OF MATHEMATICAL PHYSICS II. Full Course.
(Also listed as Physics 420).
General concepts of analysis. Partial differential equations of Physics. Function spaces and orthogonal sets. Sturm-Liouville problem. Fourier series and Fourier Integral. Special functions: Legendre, Bessel. Prerequisite: Linear Algebra, Advanced Calculus, Differential Equations. Lectures: 3 hours per week for two terms. Text: *Fourier Series and Boundary Value Problems* by Churchill (McGraw).

Modern Languages

Chairman: H. Famira

PROGRAMMES	MAJOR	JOINT MAJORS	HONOURS	JOINT HONOURS
Required* Courses	7	9 (5+4)	9+	12 (6+6)
Electives	8	6	6	3
Languages Available	German Italian Spanish Linguistics	German Italian Russian Spanish Linguistics	German Italian Spanish Linguistics	German Italian Spanish Linguistics

* One of these Required Courses in each language is Course Number 370Z (i.e. Spanish/German Joint Majors must take Spanish 370Z and German 370Z, etc.)

* In Linguistics the Required Course is Linguistics 300Z.

+ Students in an Honours Course must take one course in Linguistics

In courses numbered from 316Z to 584Z, a higher number does not indicate a greater degree of difficulty in that course.

Students wishing to do a Joint Major with Modern Languages and any other Department, should consult with the Chairmen.

Students wishing to do a Joint Major in Russian must consult with the Chairman of the Department.

The Department of Modern Languages will offer German 302S, Italian 300S and Spanish 302S commencing in the *second semester* for *full credit*. Lectures will be for 6 hours per week including 1 hour in the language laboratory. Please see respective language section for descriptions of these courses.

Courses leading to a B.A. with a double major in French and one of the Modern Languages.

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
French 310Z or 312Z	French 421	French (one of F.540Z
French (either F.342Z or F.344Z)	French (either F.423 or F.425)	F.542Z and F.544Z)
French (either F.360Z or F.364Z, F.368Z)	French 432Z	French 572Z
2 courses (Modern Language)	2 courses (Modern Language)	3 courses (Modern Language)
	Elective	

German

- 300Z INTRODUCTION TO GERMAN STUDIES. Full Course. H. Famira & Staff
A comprehensive and thorough introductory language course for the student with little or no formal knowledge of German. May be taken concurrently with German 302Z. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms.

- 302Z **ELEMENTARY GERMAN. Full Course.** H. Famira & Staff
An introductory language course which develops all basic skills. For students with no knowledge of German. Emphasis on the audio-visual and audio-lingual approach. May be taken concurrently with German 300Z. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms.
- 306Z **READING GERMAN & INTRODUCTION TO TRANSLATION. Full Course.** H. Scheer & Staff
Grammatical review. Introduction to translation in German. Readings and translation to various texts. May be taken concurrently with German 300Z or 302Z or equivalent. Prerequisite: German 308Z. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms.
- 308Z **INTERMEDIATE GERMAN. Full Course.** H. Scheer & Staff
Advanced German grammar. Conversation and writing of compositions in German. Readings from German authors and other texts. May be taken concurrently with German 306. Prerequisite: German 300Z or 302Z or equivalent. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms.
- 370Z **ADVANCED COMPOSITION AND STYLISTICS. Full Course.**
Introduction to comparative stylistics. Vocabulary expansion by word formation and derivation; selected grammatical problems. Analysis of literary and journalistic texts. Prerequisite: German 306Z or 308Z or equivalent.
- 410Z **GERMAN LITERATURE OF THE 19TH CENTURY. Full Course.**
(Not Offered in 1973-74).
- 420Z **SURVEY OF GERMAN LITERATURE 800-1750. Full Course.**
(Not Offered in 1973-74).
- 480Z **INTRODUCTION TO THE GERMAN "NOVELLE". Full Course.** H. Famira
The "Novelle" as an example of highly sophisticated formal achievement in German literature.
- 530Z **THE RISE OF 20TH CENTURY GERMAN LITERATURE. Full Course.**
(Not Offered in 1973-74).
- 540Z **CLASSICISM IN GERMAN LITERATURE. Full Course.**
(Not Offered in 1973-74).
- 560Z **LITERATURE OF THE ROMANTIC PERIOD. Full Course.** H. Scheer
Romanticism as a universal attitude. Writings of the major romantic authors, their theories and realisations.
- 570Z **CONTEMPORARY GERMAN LITERATURE. Full Course.**
(Not Offered in 1973-74).
- 584Z **TUTORIAL. Full Course.**
A course designed to meet the individual needs of advanced students. Guided readings in German literature under the supervision of the department. Written and oral criticism of the works studied. Prerequisite: Permission of the department is required for enrolment in this course.

Students taking German will be expected to join the Canadian German Academic Exchange Association.

ITALIAN

- 300Z **INTRODUCTION TO ITALIAN STUDIES. Full Course.** A. Costanzo & Staff
A comprehensive and thorough introductory language course for the student with little or no formal knowledge of Italian. May be taken concurrently with Italian 302Z. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms.
- 302Z **ELEMENTARY ITALIAN. Full Course.**
An introductory language course which develops all basic skills. For students with no knowledge of Italian. Emphasis on the audio-visual and audio-lingual approach. May be taken concurrently with Italian 300Z. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms.
- 306Z **READING ITALIAN AND INTRODUCTION TO TRANSLATION. Full Course.**
Grammatical review. Introduction to translation in Italian. Readings and Translation of various texts. May be taken concurrently with Italian 308Z. Prerequisite: Italian 300Z or 302Z or equivalent. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms.
- 308Z **INTERMEDIATE ITALIAN. Full Course.** C. DiMichele & Staff
Advanced Italian grammar. Conversation and writing of compositions in Italian. Readings from Italian authors and other texts. May be taken concurrently with Italian 306Z. Prerequisite: Italian 300Z or 302Z or equivalent. Lectures: 3 hours per week for two terms. Lab: 1 hour per week for two terms.
- 316Z **ITALIAN CIVILIZATION. Full Course.**
(Not Offered in 1973-74).
- 320Z **SURVEY OF ITALIAN LITERATURE. Full Course.**
(Not Offered in 1973-74).
- 370Z **ADVANCED COMPOSITION AND STYLISTICS. Full Course.** C. Fonda
Creative writing. Stylistic theories and analysis of literary styles. Prerequisite: Italian 306Z or 308Z or equivalent. Lectures: 3 hours per week for two terms.
- 400Z **LITERATURE OF THE 17TH AND 18TH CENTURIES. Full Course.** C. Di Michele
A study of the principal literary trends of the seventeenth and eighteenth centuries. Emphasis on Marino, Metastasio, Vico, Parini, Goldoni, Alfieri.
- 410Z **LITERATURE OF THE 19TH CENTURY. Full Course.**
(Not Offered in 1973-74).
- 420Z **LITERATURE OF THE 20TH CENTURY. Full Course.**
(Not Offered in 1973-74).
- 440Z **DANTE. Full Course.**
(Not Offered in 1973-74).
- 470Z **THE ITALIAN THEATRE. Full Course.** C. Di Michele
Evolution of the Italian Theatre from the origin to the present. Prerequisite: Permission of the Department.

- 500Z LITERATURE OF THE MIDDLE AGES. Full Course.
(Not Offered in 1973-74).
- 510Z LITERATURE OF THE 15TH CENTURY. Full Course. A. Costanzo
The rise of humanism in Italy. A study of representative works of the
fifteenth century. Emphasis on Pulci, Boiardo, Lorenzo de Medici,
Poliziano, Leonardo da Vinci and Sannazaro.
- 520Z LITERATURE OF THE 16TH CENTURY. Full Course.
(Not Offered in 1973-74).
- 570Z ITALIAN LITERARY CRITICISM. Full Course. C. Fonda
A study of the main trends of Italian literature from the origin to the
present.
- 584Z TUTORIAL. Full Course.
A course designed to meet individual needs of advanced students. Guided
readings of Italian literature under the supervision of the department.
Written and oral criticism of the works studied. Prerequisite: Permission
of the department is required for enrolment in this course.

LINGUISTICS

- 300Z INTRODUCTION TO LINGUISTICS. Full Course. C. Fonda
The nature of language. The methods of language analysis. Introduction to
phonology, morphology and syntax. Principles of foreign language
instruction. Lectures: 3 hours per week for two terms.
- 310Z HISTORICAL AND COMPARATIVE LINGUISTICS. Full Course.
(Not Offered in 1973-74).
- 350Z LANGUAGE IN CULTURE AND SOCIETY. Full Course.
(Not Offered in 1973-74).
- 400Z SOCIOLINGUISTICS. Full Course.
(Not Offered in 1973-74).
- 420Z PROBLEMS IN SEMANTICS. Full Course. C. Fonda
This course provides an introduction to descriptive, historical, and general
Semantics. The role of Semantics in grammar will be examined (deep
structures, surface structures, noun phrases, etc.), together with the
relationship of presuppositions and references to meaning. Types of
lexical information will be studied by classifying Semantic features. The
grammar of metaphor will be examined, also the logical and rhetorical
aspect of metaphors will be analyzed as they relate to meaning.
Prerequisite: Linguistics 300Z or permission of the department.
- 450Z ANALYTICAL PROCEDURES AND DESCRIPTIVE TECHNIQUES:
PHONETIC AND PHONEMIC ANALYSIS. Full Course. H. Scheer
This course is designed to present the procedures of modern phonemics.
Speakers of a number of languages will be used as informants to provide
actual practice in recording and classifying data, and problems in
phonemic analysis will be discussed in class. The main objective of this
course will be to provide the student with the tools of modern phonemic
analysis to allow him to pursue further studies in this field. Prerequisite:
Linguistics 300Z or permission of the department.
- 500Z LINGUISTICS APPLIED TO LANGUAGES LEARNING. Full Course.
(Not Offered in 1973-74).

RUSSIAN

- 300Z ELEMENTARY RUSSIAN. Full Course.
An elementary course in reading, writing and grammar for students with
little or no knowledge of Russian. Lectures: 3 hours per week for two
terms. Lab: 1 hour per week for two terms.
- 306Z INTERMEDIATE RUSSIAN. Full Course.
Review of the practice in Russian grammar, composition, reading and
conversation with some material from modern Russian writers.
Prerequisite: Russian 300Z or equivalent. Lectures: 3 hours per week for
two terms. Lab: 1 hour per week for two terms.

SPANISH

- 300Z INTRODUCTION TO SPANISH STUDIES. Full Course. E. Ottolenghi & Staff
A comprehensive and thorough introductory language course for the
student with little or no formal knowledge of Spanish. May be taken
concurrently with Spanish 302Z. Lectures: 3 hours per week for two
terms. Lab: 1 hour per week for two terms.
- 302Z ELEMENTARY SPANISH. Full Course.
An audio-visual course for students with no knowledge of Spanish. This
course is designed for developing conversational skills. May be taken
concurrently with Spanish 300Z. Lectures: 3 hours per week for two
terms. Lab: 1 hour per week for two terms.
- 306Z IDIOMATIC SPANISH & INTRODUCTION TO TRANSLATION. Full
Course.
Grammatical review. Introduction to translation in Spanish.
Contemporary readings of literary, commercial and journalistic texts. May
be taken concurrently with Spanish 308Z. Prerequisite: Spanish 300Z or
302Z or equivalent. Lectures: 3 hours per week for two terms. Lab: 1
hour per week for two terms.
- 308Z INTERMEDIATE SPANISH. Full Course. F. Antolin & Staff
Review of Spanish grammar. Composition and oral practice with special
stress on conversation by means of audio-visual practice. Introduction to
literary texts illustrating Spanish and Spanish-American culture as well as
its life. May be taken concurrently with Spanish 306Z. Prerequisite:
Spanish 300Z or 302Z or equivalent. Lectures: 3 hours per week for two
terms. Lab: 1 hour per week for two terms.
- 316Z SPANISH & SPANISH-AMERICAN CIVILIZATION. Full Course. E. Ottolenghi
The making of Spanish civilization, important aspects of Latin-American
culture before and after Columbus' time. Economic, political and social
problems of contemporary Spain and Spanish America. Prerequisite:
Spanish 306Z or 308Z or equivalent. Lectures: 3 hours per week for two
terms.
- 370Z ADVANCED COMPOSITION & STYLISTICS. Full Course. F. Antolin
Creative composition and comparative stylistics. Analysis of selected
Spanish and Spanish-American short stories. A course designed to give the
student practical experience in the use of the spoken and written language
as well as clear criteria on stylistics. Prerequisite: Spanish 306Z or 308Z or
equivalent.
- 400Z SURVEY OF SPANISH LITERATURE. Full Course.
Analysis of the most outstanding masterpieces from the Renaissance till

the 20th Century with special stress on the cavalry, picaresque and realistic novels.

410Z SPANISH LITERATURE OF THE 18TH AND 19TH CENTURIES. Full Course.
(Not Offered in 1973-74).

420Z SPANISH LITERATURE OF THE 20TH CENTURY. Full Course.F. Antolin.
Introduction: Generation of 1898; The Second Generation: Ortega; The Third Generation: Lorca; the poetic world of J.R. Jimenez; some aspects of the poetry, drama and novels after the Spanish civil war.

450Z LITERATURE OF SPANISH AMERICA. Full Course.
(Not Offered in 1973-74).

470Z SPANISH THEATRE. Full Course. E. Ottolenghi
Evolution of the Spanish theatre. Study of some classic outstanding plays. Stress on oral practice and performance of a play. Prerequisite: Permission of the department is required for enrolment in this course. Lectures: 3 hours per week for two terms and the performance of one play.

500Z LITERATURE OF THE MIDDLE AGES. Full Course.
(Not Offered in 1973-74).

510Z LITERATURE OF THE GOLDEN AGE. Full Course.
(Not Offered in 1973-74).

530Z GENERATION OF 1898. Full Course.
(Not Offered in 1973-74).

550Z SPANISH-AMERICAN LITERATURE OF THE 20TH CENTURY. Full Course.
E. Ottolenghi

The literary trends in Spanish-America from the Modernism till present day. Readings and analysis of novels, poetry and drama of the most outstanding writers of the Century.

584Z TUTORIAL. Full Course.
A course designed to meet individual needs of advanced students. Guided readings in Spanish and/or Spanish-American literature under the supervision of the department. Written and oral criticism of the works studied. Prerequisite: Permission of the department is required for enrolment in this course.

Philosophy

Chairman: J.D. Morgan

Courses leading to a Bachelor of Arts in Honours Philosophy.

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Philosophy 500Z	Philosophy 502Z	Philosophy 504Z
Philosophy 410Z	Philosophy 420Z	Philosophy 430Z
Philosophy Elective	Philosophy Elective	Philosophy Elective
Elective	Elective	Elective
Elective	Elective	Elective

Courses leading to a Bachelor of Arts with a Major in Philosophy.

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Philosophy 500Z or other Logic course.	Philosophy 502Z or other course in	Philosophy 504Z or other course in
History of Philosophy.	moral philosophy.	metaphysics or
Elective	History of Philosophy.	epistemology.
Elective	Elective	Philosophy elective.
Elective	Elective	Elective
	Elective	Elective

Philosophy electives to be chosen in consultation with the chairman. In certain cases, students may re-order the sequence of systematic and historical courses with the permission of the chairman of the department. The student must complete five courses outside philosophy.

Courses leading to a Bachelor of Arts with an area of Concentration in Philosophy.

The student should take four courses in Philosophy as advised by the department and three cognate courses as advised by the department. He should also take at least five courses outside Philosophy and must complete a minimum of fifteen full courses or the equivalent.

Joint majors have been established with the Departments of Biology, Modern Languages, Mathematics, Theology, Classics and Political Science. See the chairman of the Philosophy Department for further information concerning these programmes.

PHILOSOPHY

300 A, B, or Z TUTORIAL: PROBLEMS IN PHILOSOPHY. Full Course or Half Course.Staff
This course is designed to meet the needs of the student whose interests do not fit into any of the other courses offered. The content and structure of the course is designed between an individual student and a professor. Arrangements should be made in advance with the department. Both terms, or first or second term.

301 A/B TUTORIAL: PROBLEMS IN PHILOSOPHY. Half Course. Staff
This course is designed to meet the needs of the student whose interests do not fit into any of the other courses offered. The content and structure of the course is designed between an individual student and a professor. Arrangement should be made in advance with the department. First or second term.

302Z INTRODUCTION TO PHILOSOPHY (HC). Full Course. J. Doyle
This course differs from introductory courses offered on the collegial level

in this respect that it takes into account the age and better preparation of students for more refined analysis of philosophical problems. Beside the origin of philosophy, basic issues will be discussed such as: What is man? What can we know? What is our duty? What can we hope for? Lectures: 3 hours per week for two terms. Text: Selections from Aristotle, Descartes, Hume, Kant, Plato.

- 305 INITIATION A LA PHILOSOPHIE POLITIQUE: LA LIBERTE ET AUTORITE. Half Course.
(Not Offered in 1973-74).
Initiation aux principales théories anciennes. Les grands régimes d'organisation de la société du point de vue de la liberté et autorité: libéralisme, totalitarisme, socialisme, démocratie. Lectures: 3 heures par semaine, terme premier.
- 309 FUTUROLOGY. Half Course. J. McGraw
(Not Offered in 1973-74).
A one-semester introduction to possible and probable problems confronting man and society in the short and long term futures with a consideration of alternative solutions to these problems. The course is interdisciplinary in nature with a philosophical basis. The classes will be conducted in the main, in seminar style and students will be required to conduct seminars and to undertake projects.
- 310Z ETHICS. Full Course. D. Park
A consideration of those major theories of normative ethics which contemporary questions presuppose. The individual authors will be seen to have contemporary disciplines, even though they call themselves by other names. Lectures: 3 hours per week for two terms. Texts: *Plato-Euthyphro & Republic*, Aristotle — *Nicomachean Ethics* (selected parts), Epictetus — *Enchiridion*, Hobbes — *Leviathan* (selected parts), Mill — *Utilitarianism*, Butler — *Five Sermons*, Kant — *Foundations of the Metaphysics of Morals*.
- 312Z MORAL PHILOSOPHY. Full Course. E. Egan
The meaning of situation ethics over against the problem of the moral absolute; the religious and metaphysical implications of ethical options; the relation of joy to moral wholeness and maturation. A criteriology for morals will be sought through attention to sex, violence and money. Lectures: 3 hours per week for two terms.
- 320Z SOCIAL AND POLITICAL PHILOSOPHY (HC). Full Course. V. McNamara
The course treats of the individual in relation to society through the reading and discussion of selected texts. Problems treated: Classical images of man; personality and society; the paradox of social control. Lectures: 3 hours per week for two terms.
- 322Z POLITICAL PHILOSOPHY: COMMUNISM, FASCISM AND DEMOCRACY. Full Course. V. McNamara
Treats the theoretical foundations of Communism, Fascism and Democracy through the reading and discussion of selected texts. Lectures: 3 hours per week for two terms.
- 324 PHILOSOPHIE POLITIQUE. Full Course.
(Not Offered in 1973-74).
Analyse moderne et examen critique des sources classiques et modernes du communisme, du fascisme et de la démocratie. Prerequisite: Un cours de philosophie et la permission du directeur du cours. Lectures: 3 heures par semaine pour deux termes.

- 326Z LEGAL PHILOSOPHY. Full Course. C. Gray
What is Law; reason or force, custom or morals, rule or fact? What do our ordinary concepts mean when they occur in law; responsibility and excuse, person and property, right and obligation, contract and punishment? How are legal statutes and decisions reasoned? How do they change and elucidate reality? Textbook and anthology are read and discussed to answer these. One paper per term is written. Lectures: 3 hours per week for two terms.
- 328Z PHILOSOPHY OF ACTION. Full Course. C. Gray
Role of action in ethics and history, human and social sciences, legal, medical and political practice are encouraged as project topics each term. Class survey first term of classical (Lobkowitz) marxist, existentialist, pragmatist and analytical philosophies of action (Bernstein). Readings second term on: Behaviour and movement; voluntariness; will and desire; motive and reason; cause and condition; rule and responsibility; ability, possibility and power; intention and purpose. Bibliography provided. Lectures: 3 hours per week for two terms.
- 330Z SOCIAL UNDERSTANDING & VALUATION. Full Course. R. Hinners
(Not Offered in 1973-74).
A critical examination of some current attempts of social and political theories to respond to such social and political issues as war, poverty, racism, sexism and ecology. Open to all students.
- 334Z PHILOSOPHY OF CULTURE (HC). Full Course. E. Egan
(Not Offered in 1973-74).
Various interpretations of the meaning of cultures and subcultures. The tension between the person and his culture will be emphasized.
- 340Z METAPHYSICS. Full Course. E. Joos
(Not Offered in 1973-74).
Discussion of the question "What is Being?" (Parmenides, Aristotle's criticism). Substance — four causes — potentially and actuality. (Aristotle). Causality of *Esse* (3 Th. Aquinas).
- 350Z EPISTEMOLOGY. Full Course. D. Park
A study of characteristic problems in epistemology with particular emphasis on the analysis of questions in terms relevant to their historical and systematic contexts. The concepts analysed include fundamental questions in the empirical sciences and would be of interest to science students. Prerequisite: one previous course in Philosophy. Lectures: 3 hours per week for two terms. Texts: Descartes, *Meditations*; Locke, *Essay Book II*; Berkeley, *Essay towards a New Theory in Vision*; Berkeley, *Principles*; Hume, *Inquiry Concerning Human Understanding*; Russell, *Problems of Philosophy*.
- 360Z FORMAL LOGIC. Full Course. M. Reidy
This course is a modern adaptation of authentic Aristotelian Logic. Its aim is to bring the student to a mastery of fundamental logical operations. Lectures: 3 hours per week for two terms.
- 362Z LOGIC AND SCIENTIFIC METHOD. Full Course. A. Kawczak
(Not Offered in 1973-74).
The course will start with an analysis of problems arising in everyday thinking in the use of language and definitions and will proceed toward a methodical development of Aristotelian Syllogistic and the modern theory of natural deduction. It will be followed by the study of induction and of the methodological structure of pure mathematics, science, history and normative disciplines. Lectures: 3 hours per week for two terms.

- 364Z SYMBOLIC LOGIC. Full Course. M. Reidy
An examination of some major philosophical issues as they occur in competing logics; and the study of problems and their solutions in symbolic logic. Lectures: 3 hours per week for two terms.
- 366Y PHILOSOPHY OF BIOLOGY. Half Course. B. Cavanaugh
In cooperation with the Biology Department, this course complements the biology courses by offering students the opportunity to investigate the philosophical basis and justification for some of the common suppositions of biology and to examine both the broader and the alternative dimensions of several key biological problems. Stress is placed on helping the student to form and express an adequate opinion of the various topics. There are a number of readings which supplement the lectures and some short papers. Lectures: 1 hour per week given over two terms.
- 370Z THE PROBLEM OF EVIL: DEATH AS A PHILOSOPHICAL PROBLEM. Full Course. J. Morgan
(Not Offered in 1973-74).
This course treats man's response to evil in general, and death — the ultimate evil — in particular. It attempts to synthesize many areas of philosophy, sociology and psychology. The strictly philosophical readings will be, for the most part, from contemporary Russian and Spanish Existentialist. The centered theme of the course is the manner of approach taken to other evils, and even to life itself. Lectures: 3 hours per week for two terms.
- 372Z PHILOSOPHY OF MAN. Full Course. J. Doyle
The course attempts to help the student who is curious about his own nature or formulate a reasonable satisfying answer to the question "What is Man?" and to explore some of the implications of that answer, e.g. how a human person comes to exist, the way he lives his life, how he views reality, and what he reasonably hopes for the future. Students will be expected to form their own opinions by reading and discussing selections dealing with human nature, the human person, the characteristic human experiences of body, mind, habit, society, individuality and related topics. Lectures: 3 hours per week for two terms.
- 374Z CONTEMPORARY THEORIES OF LOVE. Full Course. J. McGraw
A two-semester typical analysis of love and attendant phenomena with special emphasis of their metaphysical, epistemological, psychological, aesthetic, social, theological, and linguistic dimensions. The classes will be conducted on a lecture-seminar basis. Prerequisite: One previous course in Philosophy. Lectures: 3 hours per week for two terms.
- 376Z PHILOSOPHY OF HUMAN NATURE. Full Course. D. O'Connor
This course is designed as an experiment (primarily cognitive) to be carried on by a group under the direction of the professor (who functions chiefly as a resource person). The purpose of the experiment is to increment our understanding of man — especially in his perceptual cognitive and affective behaviour as an individual agent, participant in a culture, and member of groups. Special topics for consideration will be: (a) Patterns of Communication (linguistic and non-linguistic); (b) learning; (c) Psychosocial Maturation; and (d) The Class Itself in its educational, social and personal dimensions. Because of the nature of the readings (which are taken from artists, philosophers, social scientists of many varieties, etc.) and due to the fact that group participation in a learning experiment is not a part of the regular academic training of many of our students, a certain flexibility, curiosity, maturity and creativeness will be prerequisites for the course. Lectures: 3 hours per week for two terms.

- 378Z PHILOSOPHICAL ANTHROPOLOGY: PHILOSOPHY OF MAN AND PERSONALITY DEVELOPMENT. Full Course. A. Kawczak
The aim of this course is a critical analysis of multidisciplinary insights into the nature of man, his phylogenetic and ontogenetic transformations and his developmental potential. The classical Aristotelian conception of man will be related to the research and thought of the 19th and 20th centuries. Special attention will be given to existentialist philosophy, psychology and psychiatry. Lectures: 3 hours per week for two terms.
- 381 PHILOSOPHY OF GOD. Half Course. J. McGraw
(Not Offered in 1973-74).
The problem of the natural knowledge of God including readings from Plato, Aristotle, Anselm, Aquinas, Descartes, Hume, Pascal, Kant, Hegel, Feuerbach, Marx, Kierkegaard, Newman, Nietzsche, Sartre, Syer and Russell.
- 382Z PHILOSOPHY OF RELIGION. Full Course. J. McGraw
The course offers a critical assessment of whether in the light of modern developments in Philosophy, contemporary thinking man can responsibly maintain a religious belief in God. Lectures: 3 hours per week for two terms.
- 390Z LITERATURE AND PHILOSOPHY. Full Course. L. O'Hanley
(Not Offered in 1973-74).
The main purpose of this course is to try to determine as precisely as possible what role literature plays in man's total search for meaning. The procedure will consist in comparing literature with the various other branches of human knowledge and human expression.
- 392Z PHILOSOPHY AND TECHNOLOGY. Full Course. E. Joos
(Not Offered in 1973-74).
After the definition of philosophy and its role in the life of man, the following problems will be discussed; 1) the influence of technology on the life of the individual, family, society, state, with special emphasis on creativeness (work), freedom, happiness. 2) Technology as promoter and enemy of culture, religion, democracy and communication. 3) Marxism and technology (K. Axelos, *Marx penseur de la technique*). Lectures and discussions.
- 394Z AESTHETICS. Full Course. E. Egan
The notion of creative art as knowledge, as involved in the creation and appreciation of the artifact; taste and value judgment in relation to the ethical, religious and psychological dimensions of art; the relationship of creativity and taste to the social and cultural environments, with critical attention to any dualistic bias which would relegate artistic meaning to "mere aesthetics". Lectures: 3 hours per week for two terms.
- 396Z PHILOSOPHY OF HISTORY. Full Course. R. Hanners
(Also Listed as History 490Z).
The problem of historical knowledge and explanation and its relation to ideological metaphysical and religious ideas of historical development and of the meaning of history. Study of selected texts of St. Augustine, Hegel, Marx, Heidegger, Collingwood and others. Lectures: 3 hours per week for two terms.
- 398-01 PHILOSOPHY OF EDUCATION. Full Course. H. Lau
(Not Offered in 1973-74).
Examination of philosophical problems underlying educational theory. A study of the problems which arise when a theory of education is put into

practice. Consideration of trends in philosophy of education today.
Lectures: 3 hours per week for two terms.

- 398-02 PHILOSOPHY OF EDUCATION. Full Course. L. O'Hanley
The main purpose of this course is to try to answer the question: "What is Education?" The method of procedure will consist in (1) Formulation and examining one's own spontaneous answer to the questions; and (2) comparing the results of (1) with the various answers which have been given to it in the past. Lectures: 3 hours per week for two terms.
- 400 AUTHOR COURSE. Full or Half Course. M. Reidy, D. O'Connor
A/B Z This course is designed to meet the needs of the student who wishes to do in depth study of one or two particular authors who are not usually treated in depth in other courses taught that year. Arrangements must be made in advance with the department. This course may also be taken as a half course by registering for 400A or 400B.
- 410Z HISTORY OF ANCIENT PHILOSOPHY. Full Course. M. Reidy
A study of the origins of Western Philosophy in its ancient Hellenic setting and of its extension into the Christian era. Prerequisite: One previous course in Philosophy. Lectures: 3 hours per week for two terms.
- 420Z MEDIEVAL PHILOSOPHY. Full Course. E. Joos
(Not Offered in 1973-74).
The aim of the course is to link medieval philosophy with ancient and contemporary metaphysical and epistemological problems. Outline: Plato and the Late Academy, Late Antiquity; Patristic Period; Plotinus and St. Augustine (Confessions) Boethius and Abelard — Thomas Aquinas and Thomism; the continuity of the Augustinian tradition; Nominalism. Lectures and student presentation. Open to Philosophy honours and major students and others with permission of the department. Prerequisite: One previous course in Philosophy. Term work: two presentations and one essay. Lectures: 3 hours per week for two terms.
- 430Z MODERN PHILOSOPHY. Full Course. L. O'Hanley
In this course, an attempt will be made to trace the development of philosophical thought from Descartes to Hegel. The emphasis will be placed on philosophical movements or schools rather than on individual philosophers, i.e. Rationalism, British Empiricism, German Idealism, Positivism. Open to Philosophy major and honour students and others with the permission of the department. Prerequisite: One previous course in Philosophy. Lectures: 3 hours per week for two terms.
- 450Z GERMAN PHILOSOPHY. Full Course. E. Joos
(Not Offered in 1973-74).
German Idealism: A textual study of Kant's *Critique of Pure Reason* and Hegel's *Phenomenology of Spirit*.
- 452Z GENESIS AND DEVELOPMENT OF MARXIST THOUGHT. Full Course. R. Hinnens
A brief survey of some major themes in writings of Marx; a study of the historical development of Marxism as exemplified in such thinkers as Lenin, Trotsky, Gramsci, Althusser, Sartre and the Frankfurt School. Prerequisite: One previous course in Philosophy. Lectures: 3 hours per week for two terms.
- 470Z CONTEMPORARY PHILOSOPHY. Full Course. E. Joos
(Not Offered in 1973-74).
Reading and discussion of selected text in Existential Philosophies,

Phenomenology, Linguistic Analysis and Process Thought. Prerequisite: One previous course in Philosophy. Lectures: 3 hours per week for two terms.

- 472Z EXISTENTIALISM. Full Course. H. Lau
(Not Offered in 1973-74).
Existentialism is taught as an experience or personal involvement in philosophical speculations related to man. Authors discussed: St. Augustine, Pascal, Kierkegaard, Dostoevsky, Nietzsche, Heidegger, Marcel, Sartre. Open to all.
- 480Z AMERICAN PHILOSOPHY. Full Course. J. Morgan
(Not Offered in 1973-74).
A study of 19th and 20th century American philosophers, with special emphasis on the pragmatists.
- 492Z CHINESE PHILOSOPHY. Full Course. B. Cavanaugh
(Not Offered in 1973-74).
This is a general, introductory, survey course which uses the history of classical Chinese philosophy as a model of the rise of philosophical thought in the mind of men. Its scope extends from Confucius to Mao. Texts (in translation) are used where possible, supplemented by classroom commentary. The student is encouraged to attempt to gain some insight into the oriental mode of philosophy by comparing Chinese doctrines and concepts to western theories and ideas, both by participating in classroom discussions and by the presentation of two papers.
- 500Z SEMINAR — LOGIC. Full Course. A. Kawczak
This course contrasts various logical systems in vogue. Key problems showing the differences in these systems are chosen by the student and explored under minimal direction. Prerequisite: One previous course in Philosophy. Lectures: 3 hours per week for two terms.
- 502Z SEMINAR — ETHICS. Full Course. B. Cavanaugh, J. Doyle
The main purpose of this seminar is to attempt to answer the question: "What is Ethics?". In searching for the answer, special consideration will be given to the relationship which Ethics bears to Aesthetics, to the Human Sciences (esp. to Psychology, Sociology and Politics), to Religion, and to Metaphysics. Prerequisites: One previous course in Philosophy. Lectures: 3 hours per week for two terms.
- 504Z METAPHYSICS — EPISTEMOLOGY SEMINAR. Full Course. Staff
(Not Offered in 1973-74).
This course aims to answer the questions: "What is metaphysics?", "What is epistemology?". Professors and students present and develop answers together, by grouping research around traditional metaphysical categories. Concern is taken with: doubting, knowing, perceiving, thinking, individuality, persons, possibility, infinity.
- 520Z STAFF SEMINAR — NON CREDIT. Full Course. Staff
A series of papers prepared by the faculty of Loyola, Sir George, McGill and Bishop's. Highly recommended for all honour students.

Political Science

Chairman: R.C. Coyte

Courses leading to a B.A. with a major in Political Science.

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Political Science	Political Science	Political Science
Political Science	Political Science	Political Science
Elective	Elective	Political Science
Elective	Elective	Elective
Elective	Elective	Elective

A major in Political Science consists of seven courses in the Department. In the first year a student must include Political Science 300Z if he has not completed Political Science 100 (Collegial) or an equivalent course at Loyola or another institution. Five elective courses must be taken in departments other than Political Science. A student's programme will be arranged in consultation with the Department.

Courses leading to an Honours B.A. in Political Science.

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Political Science	Political Science	Political Science
Political Science	Political Science	Political Science
Political Science	Political Science	Political Science
Elective	Elective	Elective
Elective	Elective	Elective

An Honours in Political Science consists of nine courses in the Department. In the first year a student must include Political Science 300Z if he has not completed Political Science 100 (Collegial) or an equivalent course at Loyola or another institution. Five elective courses must be taken in departments other than Political Science.

Honours students are required to take three courses in the 2nd and 3rd year from the Honours seminars listed below. The course, Tutorial Readings in Political Science (Political Science 592Z) may be substituted for one Honours seminar with the permission of the Department.

- 520Z Seminar on Quebec Government and Politics.
- 524Z Seminar on Canadian Federal, Provincial and Municipal Government.
- 540Z Seminar on Methodology of Political Science.
- 542Z Seminar on Asian Communism.
- 544Z Seminar on Politics of Eastern Europe.
- 550Z Seminar on Problems of Modern Federalism.
- 560Z Seminar on Advanced Comparative Political Systems.
- 570Z Seminar on Government and Economic Policy.
- 590Z Seminar on Modern Political Thought.

An Honours student will be required to maintain a 65% average in all his courses and a minimum of 70% in Political Science Courses and pass a comprehensive oral examination at the end of the 3rd year. Students intending to pursue graduate studies in Political Science are advised to include P.S. 540Z.

Courses leading to a B.A. with a joint-major in Economics and Political Science.

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Economics 309, 311	Economics	Economics
Economics	Political Science	Economics
Political Science	Elective	Political Science
Elective	Elective	Political Science
Elective	Elective	Elective

A joint-major in Economics and Political Science consists of nine courses in both departments. Before entering the programme a student must have completed introductory courses in Economics and Political Science at the Collegial level.

Students majoring or honouring in Political Science may simultaneously pursue a concentration in Third World Studies. For details see the calendar entry under Interdisciplinary Studies.

EXPLANATION OF COURSE NUMBERS

1. Courses in the 300Z and 400Z range are open to all Political Science students and students in other departments.
2. Courses in the 500Z range are open to all students in Political Science who are in their second and third year. Students in other departments may take these courses with the permission of the Department of Political Science.

- 300Z INTRODUCTION TO POLITICAL SCIENCE. Full Course. R. Coyte
A description of the features universal to the governing processes of societies and the nature and consequences of the major variations in these processes. The course combines a theoretical and conceptual framework with a study of selected political systems and countries. It is designed to act both as introduction to the discipline for those students who plan to study further and to serve also those "terminal" students who require a systematic examination of the field in a single course. Lectures: 3 hours per week for two terms.
- 310Z INTERNATIONAL POLITICS. Full Course. K.S. Oh
This course is designed to offer an introduction of International Politics for majors and honours students in Political Science. The course will be devoted to a systematic study of inter-state behaviour both in the period of peace and war. It will include a study of the theoretical approaches, nation-state system, national power and capability, techniques for the management of power, diplomacy and foreign policy, propaganda and psychological warfare, role of International Law and world organization, and world politics. Prerequisite: Political Science 300Z. Lectures: 3 hours per week for two terms. Text: *The Analysis of International Relations*, Karl W. Deutsch.
- 320Z CANADIAN GOVERNMENT AND POLITICS. Full Course. E. Price
A detailed analysis of the B.N.A. Act. A survey of constitutional development in Canada. An institutional and functional analysis of the executive, legislative, judicial and administrative branches of the Canadian Government. A study of the Canadian political process: the electoral system, political parties, interest groups and public opinion. Seminars on issues and problems in Canadian politics: the constitutional question, economic and fiscal policy, foreign policy: health, education and welfare:

pollution, drugs and civil rights. Prerequisite: Political Science 300Z.
Lectures: 3 hours per week for two terms. Text: *The Government of Canada*, B.M. Dawson, *The Canadian Political System*, Van Loon R. and Whittington, M.

- 321A AMERICAN GOVERNMENT AND POLITICS. Half Course. R. Coyte
Theory and practice of American government. Attention is given to identifying the values and outlining the character of the American people with emphasis on political behaviour and institutions and the determination and execution of public policy. Lectures: 3 hours per week, first term.

- 340Z THE GOVERNMENT AND POLITICS OF THE SOVIET UNION. Full Course. L. Laszlo
A study of the government and politics of the Soviet Union. Discussion of the basic theories of Communism and the evolution of the Soviet system. Lectures: 3 hours per week for two terms.

- 351B BRITISH GOVERNMENT AND POLITICS. Half Course. R. Coyte
Government and Politics in Britain with particular emphasis on political parties and pressure groups, the changing role of the legislature and executive, and the Public Corporations. The issues of current constitutional interest will be discussed such as the office of Prime Minister and parliamentary sovereignty. Lectures: 3 hours per week, second term.

- 361A INTERNATIONAL ORGANIZATION. Half Course.
A survey and analysis of attempts to institutionalize order and change in international society. Chief emphasis will be on the United Nations and its affiliates. Lectures: 3 hours per week, first term.

- 363B REGIONAL ORGANIZATIONS. Half Course.
A survey and analysis of attempts to institutionalize order and change in international society. Chief emphasis will be on the European Community, COMECON, NATO, OAS, etc. Lectures: 3 hours per week, second term.

- 371A NATIONALISM: ORIGINS, OPERATION, SIGNIFICANCE. Half Course. E. Price
Examines the foundations of nationalist ideology developed originally in the early 19th century as a purely European phenomenon. Considers specific nationalist ideologies — European, African, Asian, etc. — with regard to their modality of operation and their significance in relation to a society's capacity to evolve and confront the demands, both internal and external, of the contemporary environment. Lectures: 3 hours per week, first term.

- 373B NATIONALISM, THE CANADIAN EXPERIENCE. Half Course. E. Price
Examines the origins and development of nationalism and regionalism in Canada with particular attention centered upon the interaction between French-Canadian and English-Canadian nationalist sentiments. Considers the similarities and divergencies of nationalist and regionalist sentiment in Canada with those of European nationalism, and evaluates their significance with regard to the development of the Canadian federation and its capacity to confront the realities and demands of the modern technological environment. Lectures: 3 hours per week, second term.

- 391A ANCIENT GREEK POLITICAL PHILOSOPHY. Half Course. J.W. Moore
A study of the classical texts of Ancient Greek political thought focused especially upon Plato. Lectures: 3 hours per week, first term. Text: *The Republic and Aristotle: Politics*.

- 393B ROMAN, MEDIAEVAL, AND RENAISSANCE PHILOSOPHY. Half Course. J.W. Moore

A study of the political thought of Rome and the periods of the republic and empire, concentrating mostly upon Cicero: On the Commonwealth. The political thought of the mediaeval world will be studied mainly through St. Augustine. Lectures: 3 hours per week, second term. Text: *The City of God — Selected Political Writings, The Prime and The Discourses*.

- 411A AN INTRODUCTION TO INTERNATIONAL LAW I. Half Course. H. Habib
The meaning of international law, its sources, subjects and its relationship with municipal law; recognition, state succession and state territory; rights and duties of states; role of international law in the international community. Lectures: 3 hours per week, first term. Text: *Law Among Nations*, G.V. Glahn.

- 413B AN INTRODUCTION TO INTERNATIONAL LAW II. Half Course. H. Habib
International transactions; Evolution and History of Diplomacy; its relationship to international law; diplomacy of the great powers; law and practice as to treaties; disputes, war and neutrality. Lectures: 3 hours per week, second term. Text: *Law Among Nations*, G.V. Glahn.

- 419A POLITICAL PARTIES, PRESSURE GROUPS AND PUBLIC OPINION. Half Course. M. Danis
A comparative analysis of electoral systems, political parties, pressure groups and public opinion in Western Europe and North America with special emphasis on Canada. Prerequisite: Political Science 300Z. Lectures: 3 hours per week, first term. Text: *Politics, Parties and Pressure Groups, Political Parties and Pressure Groups, Political Parties*.

- 421B COMPARATIVE FEDERAL SYSTEMS. Half Course. M. Danis
A comparative analysis of the institutions of the major classical federal systems of government. Seminars on issues and problems affecting federal governments today, such as: the constitutional court, economic affairs, social affairs, foreign relations, emergency powers, etc. The future of federalism. Prerequisite: Political Science 300. Lectures: 3 hours per week, second term. Text: *Federal Government, Canadian Federalism*.

- 424Z AN INTRODUCTION TO LAW AND THE CANADIAN CONSTITUTION. Full Course. M. Danis
An introduction to law in general and the Civil Code, in particular, with references to the Criminal Code, Companies Act, and others. This course will also deal with the Canadian Constitutional System and its major interpretations by the Courts. Prerequisite: Political Science 300Z. Lectures: 3 hours per week for two terms.

- 428Z PUBLIC ADMINISTRATION. Full Course. D. Vince
A theoretical study of government management and institutions, based on the Canadian administrative experience and related to Anglo-American comparative practice. Lectures: 3 hours per week for two terms.

- 441A CONTEMPORARY POLITICS OF CHINA. Half Course. K.S. Oh
An analysis of the present government and politics of the People's Republic of China with special emphasis on Communist movement, rise of Mao Tse-tung, triumph of Communism in China, role of CCP, political structure and governmental performance, socio-political reform, and China and the World. Lectures: 3 hours per week, first term. Text: *Modern Political Systems: Asia*, Ward and Macridis.

- 443B CONTEMPORARY POLITICS OF JAPAN. Half Course. K.S. Oh
An analysis of the political development of Japan since the end of World War II with special emphasis on construction of new Japan, old and new constitutions, political structure and governmental performance, parties and interest groups, domestic and foreign policies, and Japan and East Asia and World. Lectures: 3 hours per week, second term. Text: *Modern Political Systems: Asia*, Ward and Macridis.
- 446Z COMPARATIVE GOVERNMENT. Full Course. L. Laszlo
A comparative study of the Governments of the United Kingdom, France and the Federal Republic of Germany. Prerequisite: Political Science 300Z or equivalent. Lectures: 3 hours per week for two terms. Text: *Major Foreign Powers* by Carter & Hertz.
- 450Z AFRICAN GOVERNMENT AND POLITICS. Full Course. F. Kunz
The government and politics of African states south of the Sahara with reference to traditional political systems, colonial policies, nationalism, and the problem of nation building. Lectures: 3 hours per week for two terms.
- 461A METHODS OF POLITICAL ANALYSIS (to 1800). Half Course. J. Lewandoski
A seminar concerned with the methodologies, explicit or implicit, employed by political thinkers from the classical period to the beginning of the nineteenth century. Emphasis will be on how these thinkers believed knowledge of politics could be obtained. Resources will include readings from Plato, Aristotle, St. Augustine, Machiavelli, Hobbes, et al. Lectures: 3 hours per week, first term.
- 463B CONTEMPORARY POLITICAL ANALYSIS (1800 TO PRESENT). Half Course. J. Lewandoski
A seminar concerned with epistemology and methodology in political thought since 1800. Focus will be on the rise of natural science type methodologies, empirical techniques, doctrines of socio-economic conditioning, and the traditional responses to this ascendancy. Discussions will involve topics such as structural functionalism, systems analysis, positivism, and behaviouralism. Lectures: 3 hours per week, second term. Text: St. Simon de Locqueville, Marx, Bentley, Trend, Mumford, Arendt, et al.
- 491A EARLY MODERN POLITICAL PHILOSOPHY. Half Course. J.W. Moore
The Reformation and the rise of modern individualism. The principal political thinkers studied in this period will be Luther, Calvin, Bellarmine, Bodin, Hobbes, Harrington, Locke. Lectures: 3 hours per week, first term.
- 493B LATE MODERN POLITICAL PHILOSOPHY. Half Course. J.W. Moore
The Enlightenment and its critics and the political thought of the early industrial period. The most important thinkers to be studied in this period are de Montesquieu, Hume, Rousseau, Burke, J.S. Mill and Marx. Lectures: 3 hours per week, second term.
- 520Z SEMINAR ON QUEBEC GOVERNMENT AND POLITICS. Full Course. M. Dan
An institutional and functional survey of the executive, legislative, judicial and administrative branches of the Quebec government. A detailed study of the jurisdictional and fiscal problems between Quebec and the federal government. Discussions on the political process in Quebec; the electoral system, political parties, pressure groups and public opinion. The role of the Catholic Church in Quebec politics. A study of the most important thinkers in French Canada. Prerequisite: Political Science 320Z. Lectures: 3 hours per week for two terms. Text: *French Canadian Nationalism*, R. Cook; *Quebec in the Duplessis Era*, C. Nish; *White Niggers of America*, P. Vallières.
- 524Z SEMINAR ON CANADIAN FEDERAL, PROVINCIAL AND MUNICIPAL GOVERNMENT. Full Course. E. Griffiths
A broad survey of the basic constitutional powers under Sections 91-92 of the BNA Act, judicial review, federal-provincial fiscal relations and the state of federalism in Canada today. The main emphasis of the course falls on provincial-municipal relations, the organization and structure of local government and services, forms of metropolitan and regional government. Lectures: 3 hours per week for two terms.
- 540Z METHODOLOGY OF POLITICAL SCIENCE. Full Course. J. Lewandoski
An analysis of the various methodologies in use in Political Science today – with emphasis on the behavioural techniques. The student will develop some skill in applying them. The Behaviouralist vs. Traditionalist debate will be explored. Designed for third year Honours students in Political Science. Prerequisite: same as Political Science Major. Lectures: 3 hours per week for two terms.
- 542Z SEMINAR ON ASIAN COMMUNISM. Full Course. K.S. Oh
An intensive analysis of communism as it relates to the implication of political ideas, institutions, and domestic and foreign policies of East Asian countries. Some of the topics to be examined are: (1) ideological factors (2) socio-political base (3) institutional organizations (4) political leadership (5) tactics and strategies (6) current problems (7) communist movement of non-communist party-states. Lectures: 3 hours per week for two terms.
- 544Z SEMINAR ON THE POLITICS OF EASTERN EUROPE. Full Course. L. Laszlo
A study of selected problems of government in the Soviet Union and Eastern Europe. Participants must present two major research papers for discussion. Prerequisite: Approval of the Professor. Lectures: 3 hours per week for two terms.
- 550Z FEDERALISM AND THE MODERN TECHNOLOGICAL WORLD SOCIETY. Full Course. E. Price
A consideration of the accrued importance of the federal principle of government in the political organization of humanity resulting from the centralizing and decentralizing influences of modern technology on today's global society. Examines the global problem of co-existence in today's multi-national world society and evaluates the capacity of federalism to assure a certain measure of progress in the political organization of humanity more in accord with the social, economic and technological realities of contemporary world society. Federalism is considered with regard to its susceptibility of providing the means for absorbing the tensions that can arise from the cohabitation of divergent communities and for surmounting the primordial obstacle that has continually prevented a certain evolution in the political organization of humanity, namely: mankind's tendency to remain blindly dominated by its various nationalistic passions. Particular attention is given to the Canadian federal system as well as to several other multi-communitary federal states, with regard to the problem of cohabitation in multi-communitary societies. Lectures: 3 hours per week for two terms.
- 560Z SEMINAR ON ADVANCED POLITICAL SYSTEMS. Full Course.
A seminar on the major political systems with special emphasis on Europe. Prerequisite: Political Science 446Z. Lectures: 3 hours per week for two terms.

590Z SEMINAR ON MODERN POLITICAL THOUGHT. Full Course. J.W. Moore
A study of the main currents in modern political thought in the past century with special emphasis on the outstanding political philosophers of this period. Prerequisite: Political Science 300Z, 490Z or approval of the professor. Lectures: 3 hours per week for two terms.

592Z TUTORIAL IN POLITICAL SCIENCE. Full Course. Staff
A tutorial in a selected topic of Political Science to be undertaken under the direction of a professor in the department. The topic to be agreed upon by consultation between the student and the professor. Prerequisite: Open only to 3rd year Political Science Honours students.

Psychology

Chairman: H. Bauer

Courses leading to a B.A. with a major in Psychology.

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Psychology 301B, 303A	Psychology 401A, 403B	Psychology
Psychology 300Z	Psychology	Psychology
Elective	Elective	Elective
Elective	Elective	Elective
Elective	Elective	Elective

The Department of Psychology offers a Major programme leading to both a B.A. and a B.Sc. In addition, arrangements can be made for a joint Psychology/Biology Major, as well as for double majors with other departments. The curriculum is designed to provide for a broad general education, as well as to give adequate preparation for graduate studies in Psychology. Although we offer some courses in applied psychology, the major emphasis of the programme is theoretical and experimental.

A Major in Psychology consists of a minimum of six courses in the subject, including 300, 301B and 303A in the first year and 401A and 403B in the second year. These courses will provide the student with not only the practical experience in psychological research of all types, but also an understanding of the philosophical and scientific origins of Psychology and of the epistemological basis of scientific research methodologies.

In addition to the required and elective courses the department offers at the third year level courses which can be adapted to a student's specific needs, (Psychology 500Z, 502Z, 506Z). Students wishing to take Psychology 500Z, Advanced Experimental Psychology, should register at the end of their second year. Acceptance will only be finalized after submission of a definite research proposal not later than three weeks after beginning of the Fall term. Students wishing to take Psychology 506Z, Directed Readings, should prepare, before the beginning of the Fall term, a list of books that have relevance to the problem area undertaken for study by the student. For courses at the 400 and 500 level, specific prerequisites are required. *The relevant prerequisites are listed with each course. Students wishing to take these courses who do not have the necessary prerequisites may register for the course with approval of the instructor.* Courses 300 to 310 are available to students in all three years. Students are advised to consult with the instructor for more detailed information than is provided in the calendar.

300Z HISTORICAL APPROACH TO SYSTEMATIC PSYCHOLOGY. Full Course.
J. Campbell, H. Ladd, M. Shames

This is a comprehensive course which is intended to give an appreciation of how and why Psychology developed as it did in relation to historical-cultural milieux, major trends in intellectual history, contending philosophical assumptions and technical and methodological developments. Lectures: 3 hours per week for two terms.

301B STATISTICS. Half Course. R. Lambert

Material presented in this course will include: Probability theory, frequency and probability distribution, measures of central tendency and dispersion, theory of sampling distributions, normal distributions, theory of hypotheses testing and the theory of inferences about population means. This material is intended to provide both a theoretical and a practical foundation in statistics for the student interested in conducting or utilizing the results of psychological research. Lectures: 3 hours per week, second term.

- 303A **RESEARCH METHODS I.** Half Course. V. Maheux, R. Seens
A lecture and laboratory course in basic methods used in psychological research. Students will be required to design, conduct, analyse and report on a number of experiments. Required course for all majors in Psychology. Lectures: 3 hours per week, first term. Lab: 3 hours per week, first term.
- 302Z **MOTIVATION.** Full Course. R. Seens
A study of determinants (genetics, neural, hormonal, stimulus, experiential) of behaviour. Consideration of the initiation, direction and regulation of behaviour. Animal and human data and the physiological bases of motivation are considered. Lectures and Seminars: 3 hours per week for two terms.
- 304Z **DEVELOPMENTAL PSYCHOLOGY.** Full Course. E. Mouledoux
A study of physical, cognitive, emotional and social development, with emphasis on childhood and adolescence and on normal development, with some consideration of age-related deviant patterns. The course is given in lecture style, but with weekly informal workshops on special interest areas and on the development of student's skills in observational methods. Students are required to carry out observations of children in a variety of natural settings. Lectures: 3 hours per week for two terms.
- 306Z **PERSONALITY: INTRODUCTORY EXPLORATIONS.** Full Course. P. Babarik
The organization, functioning and development of personality will be elaborated according to dynamic personality theory as developed by Freud and contemporary personologists. Evidence from experimental and field studies which are relevant to personality will be related to the basic theoretical development. Lectures and Seminars: 3 hours per week for two terms.
- 308F **SENSATION AND PERCEPTION.** Full Course. S. Thorpe
In this course the importance of sensory systems in interpreting (perception) as well as receiving (sensation) information about the external world will be considered. The psychophysical study of the five human senses will be complemented by behavioural and neurophysiological studies in animals. General principles of sensory function and their interrelationships will be stressed. Lectures: 6 hours per week, first term.
- 310Z **LEARNING.** Full Course. H. Ladd
The course is a study of behaviour in terms of the principles of conditioning and learning. The first half of the course is concerned with the basic issues central to conditioning and learning. In the second half the emphasis is on human learning. Lectures: 3 hours per week for two terms. Lab: To be scheduled during regular classes.
- 400Z **HISTORY OF PSYCHOLOGY.** Full Course. E. Mouledoux
A survey of the historical antecedents of modern theoretical and applied psychologies with application of the historical perspective to understanding the twentieth century systems of psychology and some contemporary theories, methods, issues, and trends within the discipline. The course is given in seminar style with at least one written paper. Prerequisite: Psychology 300Z, 301B, 303A. Lectures: 3 hours per week for two terms.
- 401A **STATISTICS.** Half Course. R. Lambert
Material presented in this course will include: Chi-square and F distributions, the "fixed effects" models for analysis of variance,

regression and correlation. Chi-square tests and non-parametric tests of hypotheses. This material is intended to provide both a theoretical and a practical foundation in statistics for the student interested in conducting or utilizing the results of psychological research. Prerequisite: Psychology 301B, 303A. Lectures: 3 hours per week, first term.

- 403B **RESEARCH METHODS II.** Half Course. V. Maheux, R. Seens
This course is a continuation of Research Methods I. This part of Research Methods will be devoted to a critical examination of more complex experimental designs used in Psychology. Students will be required to design, conduct and evaluate experiments; and an opportunity will be provided for independent research. Prerequisite: Psychology 301B, 303A. Lectures: 3 hours per week, second term. Lab: 3 hours per week, second term.
- 402Z **SOCIAL PSYCHOLOGY.** Full Course. M. Shames
An introduction to the Methodology, concepts and research in some areas of contemporary social psychology. Group dynamics such as coalition formation, group problem-solving, communication networks, and leadership will be considered along with social influences such as interpersonal perception, conformity, attitude development and change, and aggression. Prerequisite: Psychology 300Z, 301B, 303A. Lectures: 3 hours per week for two terms.
- 404Z **PRACTICUM IN EARLY CHILDHOOD DEVELOPMENT.** Full Course. E. Mouledoux
This course combines an intensive study of development in early childhood with practical experience in a pre-school. In addition to one class meeting per week, each student must be able to commit himself or herself to three hours per week of observation and work as a teacher's aide in the college-related day nursery. After an introductory study of nursery school philosophy and observational methods, weekly seminars and reading will focus on aspects of child development which are observable in the nursery school, such as motor development, language, play, social interaction, concept formation, use of art and play materials, behaviour in routine situation, etc. The course assumes previous course work in developmental psychology or its equivalent. Prerequisite: Psychology 300, 304. Lectures: 3 hours per week for two terms.
- 406Z **COMMUNITY PSYCHOLOGY.** Full Course. P. Babarik
This course will relate psychology to the problems of man-in-society and consider basic areas of psychological knowledge as they bear upon the behaviour of man-in-institutions; that is the strategies that man used to create a habitat which in turn determines his development. The contributions of psychology to community leadership in the search for new and better personal social, cultural and ecological arrangements will be considered as they, related to such institutions as industry, education and the health, welfare and political structures. Prerequisites: Psychology 300. Lectures and Seminars: 3 hours per week for two terms.
- 408Z **HUMAN INFORMATION PROCESSING.** Full Course. J. Campbell
Examines the way in which sensory input is transformed, recognized, stored, recovered and used. The course looks at pattern and speech recognition, memory, and attention, decision making and reasoning in the context of recent experimental and theoretical work. Prerequisite: Psychology 300. Lectures: 3 hours per week for two terms.
- 410Z **SCALING AND PSYCHOMETRIC THEORY.** Full Course. (Offered in the Evening Division 1973-74 only).

This course is designed to introduce the student to measurement theory and scaling methods, fractionation methods and equisection methods. Basic psychometric principles will be dealt with including such topics as measures of validity, theory of measurement error, assessment of reliability, etc. This course will have special appeal to those students interested in attitude measurement and test construction. Prerequisite: Psychology 300, 301, 303. Lectures: 3 hours per week for two terms. Lab: Possibly seminars and/or labs.

- 412Z ANIMAL BEHAVIOUR. Full Course. H. Bauer
The study of animal behaviour, its description, function and causes, from a comparative bio-psychological point of view. Prerequisite: Psychology 300. Lectures: 3 hours per week for two terms. Lab: Possibly Seminars and/or labs scheduled during regular lecture periods.
- 414Z PHYSIOLOGICAL PSYCHOLOGY. Full Course. V. Maheux
A study of some biochemical and physiological mechanisms underlying behaviour. The topics studied include enzymes; nucleic acids; the nervous, endocrine and sensory systems; response mechanisms; emotions; etc. A good background in biology, though not required is strongly recommended. The course is designed for Majors in Psychology. Prerequisite: Psychology 300, 301, 303. Lectures: 3 hours per week for two terms.
- 500Z ADVANCED EXPERIMENTAL. Full Course. J. Campbell
This course is designed for advanced, third year students, with the major emphasis on the execution of a major research project in the student's particular area of interest. Prerequisite: Psychology 300, 301, 303, 401, 403. Seminars: 3 hours per week for two terms.
- 502Z CONTEMPORARY ISSUES. Full Course.
- 504Z MATHEMATICAL THEORIES OF BEHAVIOUR. Full Course. R. Lambert
This course is intended to demonstrate how mathematical concepts and techniques are employed in the formulation of psychological theories. Theories of simple learning, perception, decision making and reasoning will be examined. The course presupposes no particular background in mathematics and will be taught at a level of mathematical sophistication determined by the skills that students bring to it. It is a course that may be of interest to the general student of science, or to the psychology student seriously concerned with problems in theoretical psychology. Prerequisite: Psychology 300, 301, 303, 401, 403 or instructor's permission. Lectures: 3 hours per week for two terms.
- 506Z DIRECTED READINGS. Full Course. Staff
Prerequisite: Psychology 300, 301, 303, 401, 403.
- 050Z INDEPENDENT STUDIES. Full Course.

Sociology

Chairman: J. Tascone

Vice-Chairman: G. Dewey

Courses leading to an Honours BA in Sociology.

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Sociology 310Z	Sociology 400Z	Sociology 500Z
Sociology 300 level	Sociology 400 level	Sociology 550Z
Sociology 300 level	Sociology 400 level	Sociology 500 level
Elective	Elective	Elective
Elective	Elective	Elective

Courses leading to a B.A. with a Major in Sociology.

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Sociology 310Z	Sociology 400Z	Sociology 500Z
Sociology 300 level	Sociology 400 level	Sociology 500 level
Elective	Sociology 400 level	Elective
Elective	Elective	Elective
Elective	Elective	Elective

Students who have not already had an Introductory course in Sociology at the CEGEP level should register in Sociology 300Z in University I. Students in University II are advised to register in Sociology 450Z. Students in University II and III may elect Sociology courses from the 300 level if desired. Sociology 302Z and 304Z are recommended courses to be taken at some time during the 3 year programme. In choosing electives outside Sociology, students are encouraged to consider courses in related Social Science areas.

For non-Sociology majors Sociology 300Z is the normal prerequisite for registration in advanced courses in the Department. This prerequisite may be waived with the consent of the Department or professor.

- 300Z SYSTEMATIC SOCIOLOGY. Full Course. Staff
A survey-type course which examines society in terms of social structures and social processes using the basic concepts of scientific sociology. Human behaviour is viewed as a dynamic, on-going process of social interaction, involving social organization, culture and personality. A number of substantive areas of social life are considered including the family, socialization, religion, stratification, social control and deviance, education, the economic system, political institutions, etc. Lectures: 3 hours per week for two terms.
- 302Z CANADIAN SOCIETY. Full Course. J. Tarlo
First part of the course will be spent developing a theoretical framework — the "hinterland-metropolis" perspective — which will be used to examine the dynamics of different "interest groups" in Canada. This will be done within the context of four basic structures: economic; cultural-linguistic; political; and ideological. The second part of the course will be concerned with applying this hinterland-metropolis framework to specific issues affecting Canada, i.e. multi-national corporations, regional disparity, agrarian protest movements, Canadian identity, foreign control, native peoples, etc. Prerequisite: Introductory or Systematic Sociology or consent of the professor. Lectures: 3 hours per week for two terms.
- 304Z QUEBEC SOCIETY. Full Course. C. Lipsig
Is Quebec a region or a society? Within the context of the trend towards

continental integration this course studies the evolution of Quebec class structure, and economic and social institutions from New France to the present. Throughout, the unifying theme is the interplay between external forces and internal developments, the relationship between Quebec and Greater North America. Of special importance is the development of the distinct rural and urban societies during the 19th century, their interdependence, and the social conflict which accompanies their fusion during the 20th century. The impact of rapid urbanization and externally directed industrialization on power relationships both within Quebec and between Quebec and English Canada follows. This course ends with an assessment of Quebec's potential as an independent society. Prerequisite: Introductory or Systematic Sociology or consent of professor. Lectures: 3 hours per week for two terms.

- 306Z **SOCIALIZATION.** Full Course. H. Horwich
An examination of the social and cultural processes by which the individual becomes a functioning member of society. Among the perspectives considered are the symbolic interactionist theories of Cooley and Mead, the psychological theories of Freud and Erikson, and the sociological theories of Parsons, Elkin, Clausen, Inkeles, Brim, Wheeler and others. Emphasis is also given to adult socialization and re-socialization in such diverse institutional contexts as the school, occupations and professions, hospitals, prisons, the army etc. The relation of social structure to role acquisition and role performance constitutes a major focus of the course. Prerequisite: Introductory or Systematic Sociology. Lectures: 3 hours per week for two terms.
- 308Z **DEVIANCE, CRIME AND DELINQUENCY.** Full Course. H. Horwich
An examination of the nature, forms, sources, functions and dysfunctions of deviations from social norms, and the mechanisms of social order and control. Deviance is viewed as a social process of action, interaction and relationships that derive from the social structure and have consequences for it. Various forms of deviance, from extreme under-conformity to extreme over-conformity, are considered in terms of contemporary social theory and research, with particular emphasis on crime and delinquency. Prerequisite: Introductory or Systematic Sociology. Lectures: 3 hours per week for two terms.
- 310Z **CLASSIC SOCIAL THEORY.** Full Course. S. Drysdale
Examination of the origins of Sociology and of the sociological works of nineteenth and early twentieth century European theorists, with consideration of the social and political context. Particular emphasis will be given to the works of Durkheim, Marx and Weber. Reading will include primary sources and critical commentaries. Required of all major and honours students in Sociology. Prerequisite: Introductory or Systematic Sociology. Lectures: 3 hours per week for two terms.
- 312Z **RACE AND ETHNIC RELATIONS.** Full Course.
Explores the emergence of contemporary ideas about skin color and ethnic or national group sentiment as they re-shape the social landscape determining ways of individual and collective behaviour as well as self-perception. The course is designed to allow students to more easily comprehend the ideas of race and culture through the exploration of case studies of the role of these ideas in other societies, at other historical periods, as well as our own society in present time. Prerequisite: Introductory or Systematic Sociology. Lectures: 3 hours per week for two terms.
- 314Z **MARRIAGE AND THE FAMILY.** Full Course. J. Tascone

Sociological study of marriage and the family. Earlier phases of course will deal with personality formation within the family, dating and marriage, marital adjustment, and problems in marriage generated by social change. Later phase of course will entail an analysis of the family as a basic social institution within a structural-functional framework. Patterns of interaction between family members and between the family and other institutions will be examined. Sources of strain and tension in such relationships will be discussed. Prerequisite: Introductory course in Sociology or consent of the professor. Lectures: 3 hours per week for two terms.

- 316Z **ECONOMY AND SOCIETY.** Full Course.
(Not Offered in 1973-74).
Explores the relationships between the organization of man's economic life and the range of his social possibilities. The course focuses upon the emergence of types of market relationships and exchange systems from the mediaeval period to contemporary times including newer experimental communities and their relationship to broader socio-economic frameworks. Prerequisite: Introductory or Systematic Sociology.
- 400Z **METHODOLOGY OF SOCIOLOGY.** Full Course. J. Tresierra
A survey of problems and issues in the philosophy of social research, consideration of the relation between sociological theory and research and examination of the major methodologies in Sociology. Prerequisite: Introductory or Systematic Sociology. Lectures: 3 hours per week for two terms.
- 402Z **SOCIAL PSYCHOLOGY.** Full Course. W. Harman
We change and our definition of reality changes as we interact with other people. In this course we will examine the process of creating and altering our personalities and concepts of reality. This theme will take the class beyond the traditional boundaries of social psychology and into the areas of sociology of knowledge, anthropology, linguistics, psychiatry, philosophy and literature. The class periods will be spent exploring the students' and professor's reaction to the assigned reading material in an attempt to understand the social and emotional basis of our own definitions of self and reality. Prerequisite: Introductory or Systematic Sociology. Lectures: 3 hours per week for two terms.
- 404Z **SOCIOLOGY OF URBAN REGIONS.** Full Course.
(Not Offered in 1973-74).
The first semester will be devoted to the historical development of the city, focusing on an analysis of the pre-industrial city from a cross-cultural perspective. The second semester will study the growth of urbanization in North American, concentrating on Canada and the social and spatial organization of Canadian cities. Focus will be on the problems cities in industrial Canada face, and an exploration of the courses of these problems in the politico-economic organization of the nation. The ideologies of planning and urban renewal will be critically evaluated, especially as they are manifested in the functioning of the Montreal Urban Community. Finally an analysis of citizens' groups and community organizing in Canadian cities will be offered. Prerequisite: Introductory or Systematic Sociology.
- 406Z **SOCIAL STRATIFICATION.** Full Course. G. Dewey
An examination of the three major stratification systems — caste, estate, class — in their social and historical contexts. Consideration of various theoretical and empirical approaches to stratification with emphasis on modern class society. Prerequisite: Introductory or Systematic Sociology. Lectures: 3 hours per week for two terms.

- 408Z SOCIOLOGY OF KNOWLEDGE. Full Course.
(Not Offered in 1973-74).
Study of the relationship between ideas and social structure. Consideration of classic and modern sociological theories on the construction, maintenance, justification, subversion, and change of socially shared ideas about reality. Primary objective of the course will be the use of perspectives derived from sociology of knowledge in the analysis of particular definitions of reality as presently found in social, political, religious, and economic contexts. Prerequisite: Advanced standing in Sociology or consent of the professor.
- 410Z SOCIAL MOVEMENTS IN QUEBEC. Full Course.
(Not Offered in 1973-74).
Analysis of major movements for social change that have developed historically in Quebec. Concentration on the rebellion for economic independence, 1837; the Louis Riel affair; the anti-conscription movements; Catholicism and the organizing of youth; the labour movement and the separatist movement, RIN through Quebec. Prerequisite: Introductory or Systematic Sociology and Quebec Society.
- 420Z SOCIAL AND CULTURAL ANTHROPOLOGY. Full Course. S. Hlophe
An analysis and description of the social structure, ritual, symbolism, kinship and political systems of Complex Societies. Special emphasis is laid on Afro-American Anthropology, the Native Peoples of Canada and African traditional political systems. Modern myths on the occult, Edward T. Hall's *Silent Language* and Edmund Carpenter's *Anthropologist in the Electronic World* also constitute an integral part of this course. Prerequisite: Systematic Sociology or consent of Instructor. Lectures: 3 hours per week for two terms.
- 421A SOCIOLOGY OF ECONOMIC DEVELOPMENT. Half Course. J. Tresierra
A look at the theories and models of economic development with special reference to the metropolis-satellite model of multi-national corporation monopoly capitalism. Developmental processes of foreign aid, Peace Corps and CUSO Volunteerism, the role of local political elites and self-reliance are critically analysed as possible alternatives or obstacles to economic development. Prerequisite: Introductory or Systematic Sociology. Lectures: 3 hours per week, first term.
- 423B POPULATION. Half Course. J. Tresierra
A theoretical approach to current issues related to the determinants and consequences of population structure and dynamics. Emphasis will be given to the relationship between economic development and population growth. Prerequisite: A basic knowledge of Statistics, Introductory Sociology or Systematic Sociology. Lectures: 3 hours per week, second term.
- 425A SOCIOLOGY OF RELIGION. Half Course.
(Not Offered in 1973-74).
Analysis of religious experience, beliefs, ritual, and organizations as social facts. Consideration of both traditional and contemporary religious institutions as sources of meanings and values which may either support or subvert ongoing social structures. Attention also given to how non-religious situations generate religious movements and, reversely, how religious situations generate non-religious. (i.e. social, economic, political) movements. Prerequisite: Advanced standing in Sociology or consent of professor.

- 427B SOCIOLOGY OF LABOUR AND CAPITAL IN QUEBEC. Half Course.
(Not Offered in 1973-74).
Study of the development of the labor force, the evolution of workingmen's organizations, the clash between American and domestic unions; the evolution of the new working class; the relations between the state and the labor movement. Prerequisite: Introductory or Systematic Sociology and Quebec Society.
- 450Z SOCIOLOGICAL STATISTICS. Full Course.
This course will deal principally with aspects of measurement in Sociology. The first part will be devoted to the discussion of descriptive statistics in terms of scaling techniques, measures of central tendency, dispersion and location. The second part will cover inferential statistics. The principal topics to be discussed will be probability theory, sampling procedures and testing hypothesis. Prerequisite: Introductory or Systematic Sociology. Lectures: 3 hours per week for two terms.
- 460 TOPICAL SEMINAR IN SOCIOLOGY. Half Course.
A/B Seminar course focusing on special sociological topics or areas as designated by those instructors offering such seminars in a given year. For further information consult the Departmental Curriculum Addendum published in spring. Prerequisite: Introductory or Systematic Sociology and consent of instructor. Restricted to Sociology Majors and Honours.
- 500Z CONTEMPORARY SOCIAL THEORY. Full Course. G. Dewey
Critical examination of contemporary social theories against the background provided by the sociological ideas of Marx, Durkheim, Weber, and the like. Major attention will be given to the critical assumptions, conceptual distinctions, methodological features, and ethical implications of divergent versions of modern sociological theories. Course will require extensive reading, class presentations, and a major critical paper. Prerequisite: Advanced standing in Sociology or consent of the professor. Lectures: 3 hours per week for two terms.
- 502Z SOCIOLOGY OF WORK. Full Course. C. Lipsig
First semester — a macro analysis of the theory and practice of work as it has evolved in western society. Focus will be on tracing the change and the nature of work — the emergence of class, changes in work relationships, in the concepts of leadership, authority, and decision-making — as these are influenced by the emergence of the monopoly capitalist system. Second semester a micro analysis of the nature of work in American Post Industrial Society. Special emphasis will be placed on comparing the Blue and White Collar worlds of work. The key problems of alienation, automation, and powerlessness will be explored. A survey of worker response to these problems will conclude the course. Prerequisite: Introductory or Systematic Sociology and Classic Theory. Lectures: 3 hours per week for two terms.
- 504Z SOCIOLOGY OF ECONOMIC CHANGE IN QUEBEC. Full Course.
Study of Quebec economic institutions as developing historically. Special emphasis on internal colonialism and external dependence. To be focused on macro analysis. Prerequisite: Introductory or Systematic Sociology and Quebec Society. Lectures: 3 hours per week for two terms.
- 506Z SOCIOLOGY OF WOMEN. Full Course. S. Drysdale
An examination of the status of women in North American society — especially regarding socialization, marriage and the family, education, religion and the law. Within an historical and comparative framework consideration will be given to the ideology of sexism, revolution, life

cycles and socio-economic and ethnic dimensions as well as Woman's Liberation as a social movement. Prerequisite: Introductory or Systematic Sociology. Lectures: 3 hours per week for two terms.

521A SOCIOLOGY OF EDUCATION. Half Course.
(Not Offered in 1973-74).

An analysis of the social relationships emerging within a formal education system. The concept of education as a powerful tool for socialization and social control will be explored. Special emphasis will be placed on alternative approaches to the present formal structure, i.e., "living-learning", independent study, etc. The phenomena of technology and depersonalization in education are also examined. Prerequisite: Introductory or Systematic Sociology.

523B POLITICAL SOCIOLOGY. Half Course.
(Not Offered in 1973-74).

Socio-economic and cultural determinants of political power and political behaviour in Canada will be analyzed. Of special interest will be those situations and epochs in which political behaviour and the institutions of political power are radically modified. An analysis of the new parties and extra-electoral protest movements which influence behaviour and power will be important themes. Prerequisite: Introductory or Systematic Sociology.

550Z HONOURS SEMINAR AND ESSAY. Full Course. Staff

A departmental seminar during the first term which will include discussion of methodological and theoretical concerns related to the formulation of the honours proposals, and presentations by students on topics related to their essay. Second term will involve completion of independent research and submission of the honours essay. Required of all Third Year Honours students. Prerequisite: Third Year Honours standing in Sociology.

558Z INTRODUCTION TO SOCIAL WORK. Full Course.

This course attempts to provide the student who is giving consideration to Social Work as a career an opportunity to finalize a decision by examining the nature and scope of this profession, its history and methods, and the basic elements of the casework process, namely; the study, diagnosis and treatment procedures. Also examined will be the role of community resources in the casework approach. Prerequisite: Introductory or Systematic Sociology or consent of professor. Lectures: 3 hours per week for two terms.

560 A/B Half Course.

Seminar course focusing on special sociological topics or areas as designated by those instructors offering such seminars in a given year. For further information consult the Departmental Curriculum Addendum published in spring. Prerequisite: Introductory or Systematic Sociology and consent of instructor. Restricted to Sociology Majors and Honours.

560Z TOPICAL SEMINAR IN CAPITALISM AND UNDERDEVELOPMENT IN AFRICA AND LATIN AMERICA. Full Course. S. Hlophe

This course is an application of the theories of economic development to the African and Latin American experience with multi-national corporation domination of their economies. It raises the question of whether self-reliance (in the sense of Nyerere's "Ujamaa") is a more viable alternative to development for Africa and Latin America, rather than the creation of a local petty bourgeoisie of entrepreneurs. Prerequisite: Introductory or Systematic Sociology and permission of professor.

Theological Studies

Chairman: J. Hofbeck

B.A. with an Honours in Theological Studies

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Theology	Theology	Theology
Theology	Theology	Theology
Theology	Theology	Theology
Elective	Elective	Elective
Elective	Elective	Elective

B.A. with a Major in Theological Studies

UNIVERSITY I	UNIVERSITY II	UNIVERSITY II
Theology	Theology	Theology
Theology	Theology	Theology
Elective	Theology	Elective
Elective	Elective	Elective
Elective	Elective	Elective

Joint Honours and Majors programmes with other disciplines are also available.

Any course offered by the Department of Theological Studies may be taken by any qualified student as an Elective with the exception of Theology 601Z.

Since there is a particular career opportunity for qualified religion teachers at various Catholic school commissions we advise interested students to enroll in a double major with the Department of Theological Studies.

With the approval of the Department one of the required courses in Theological Studies can be replaced by a cognate course given in other departments (e.g. Classics 350Z, 360Z, 390Z, 462Z, 492Z, History 530Z, Sociology 425; Philosophy 382Z).

Majors and other specialized students will choose their courses in consultation with the Department Chairman.

The Department is offering a balanced programme over a three-year cycle. The following courses are offered in the Winter Session 1973/74:

I COURSES OF GENERAL INTEREST

Recommended to all University Students (1st, 2nd and 3rd year)

CONTEMPORARY RELIGIOUS PROBLEMS

- 301A PRAYER AS SEEN IN THE BIBLE. Half Course.** W. Bedard
The recent upsurge of religious experience from Pentecostalism to Eastern mysticism shows modern man's deep interest in prayer. The course will explore this phenomenon in relation to the Biblical understanding of prayer. Lectures: 3 hours per week, first term.

- 301B PRAYER AS SEEN BY CONTEMPORARY THEOLOGIANs. Half Course.** W. Bedard
It is noteworthy that contemporary theologians see prayer as a particularly important theological subject. Some of these authors will be studied, with particular reference to the different approaches represented

respectively by Hans Urs von Balthasar and Karl Rahner. Lectures: 3 hours per week, second term.

- 310Z CONTEMPORARY ATHEISM. Full Course. J. Hofbeck
The Christian of today has to face an accelerated process of secularization and new forms of atheism. This course intends to analyse the contemporary phenomenon "atheism", to examine its roots, to raise the question of its positive meaning, and to define a Christian attitude towards it. Through this dialogue with atheism we would attempt to uncover the essentials of Christianity itself. Lectures: 3 hours per week for two terms.
- 313 RELIGIOUS EXPERIENCE IN CONTEMPORARY SOCIETY. Full Course. P. Jones
Z-01 An exploration of some of the less orthodox paths taken by modern man in his search for religious meaning. Presentations will be given by those involved in this search in a variety of ways. The course will also uncover historical precedents for modern religious manifestations in the Hindu, Buddhist, Jewish and Christian cultures. The occult and its appeal. Chemically-induced religious experience and its authenticity. Hasidic Judaism. Spiritualism. The "charismatic movement" in Christianity. Eastern mysticism in the West. Lectures: 3 hours per week for two terms.
- 313 RELIGIOUS EXPERIENCE IN CONTEMPORARY SOCIETY. Full Course. P. Jones
Z-02 Same as 313Z-01.
- 316Z CHRISTIANITY AND MARXISM. Full Course. P. Moroziuk
The course will centre around the examination of the basic premises by means of which Christianity and Marxism believe and hope they can cope with the problems of personal and social human existence. Other issues explored will be the role of atheism in Marxism and theism in Christianity, and the Marxist-Christian dialogue. Lectures: 3 hours per week for two terms.
- 317Z RUSSIAN RELIGIOUS HUMANISM. Full Course. P. Moroziuk
The course will consist of the study of Dostoevsky, Tolstoy and Berdyaev with reflections upon the following dimensions of religious experience: God and human personality; nature of human existence; the necessity of faith; the possibility of morality without God; is there meaning in life? Lectures: 3 hours per week for two terms.
- 325 MARRIAGE. Full Course. C. Paris
Z-01 A study of the phenomena that express man's need for love and union. Marriage has traditionally been the most common symbol of this love and union answering a psychological, social and religious need. Questions are being asked concerning the necessity and permanence of marriage as a civil or religious institution. Lectures: 3 hours per week for two terms.
- 325 MARRIAGE. Full Course. C. Henkey
Z-02 Same as 325Z-01.
- 328Z AUTHORITY, FREEDOM AND ANARCHY. Full Course. P. Richardson
An exploration of the meaning of freedom, not in the sense of freedom of the will, but as a description of human existence. It attempts to uncover man's tendencies towards anarchy and authoritarianism as a part of this movement towards freedom. Lectures: 3 hours per week for two terms.

- 337Z THE PROBLEM OF EVIL. Full Course. S. Wesolowsky
The exploratory course that will treat, from a theological and philosophical perspective, the problem of evil both historically and thematically: historically, by considering occurrences of various modes of speaking about evil; thematically, by considering the methodological issue involved in the legitimacy, relevance, and dynamics of such an enquiry. Lectures: 3 hours per week for two terms. (Not Offered in 1973-74).

INTERDISCIPLINARY EXPLORATIONS

- 340Z THEOLOGY AND THE ARTS. Full Course. M. Spicer
A theoretical and practical exploration of the mythic and poetic roots of theological discourse, examining recent art forms, in music, painting and film, in order to determine their vital theological content leading to a theological understanding of the creative imagination. Lectures: 3 hours per week for two terms. (Not Offered in 1973-74).
- 355Z ULTIMATE CONCERN IN NORTH AMERICAN LITERATURE. Full Course. G. O'Brien
Existential questions, the absurd, alienation, utopia, etc., will be explored, in a theological perspective, through the study of representative works of drama and fiction. Particular attention will be given to writings of Albee, Vonnegut, Malamud, Tennessee Williams, and others. Lectures: 3 hours per week for two terms.
- 356Z THREE AUTHORS IN SEARCH OF A THEOLOGY. Full Course. E. O'Brien
(Not Offered in 1973-74).
A discussion of the theological thrust, implicit yet substantive, of the poems of T.S. Eliot, the novels of Graham Greene, the short stories of Flannery O'Connor. Lectures: 3 hours per week for two terms.
- 361Z THEOLOGY AND POLITICS. Full Course. A. Webster
A study of the historical reciprocity between political structures and the theological expressions of man's social and political existence. Lectures: 3 hours per week for two terms.
- 364Z PSYCHOLOGY AND RELIGION. Full Course. M. Spicer
A theological amplification on contributions from analytical, social and existential psychologies toward therapeutic and developmental aspects of religious experience for the individual in contemporary society. A comparison of psychological and theological models in the examination of human relations through the life span from birth to death engaging the student in a mature critical reflection concerning the psychic nature of faith. Lectures: 3 hours per week for two terms. (Not Offered in 1973-74).

RELIGIOUS DIVERSITY

- 377Z PRIMITIVE RELIGIONS. Full Course. G. O'Brien
A consideration of the basic religious attitudes and postures of primitive man and of the nature and role of religion in his life. An attempt will be made to assess the contribution of the religion of primitive man to certain historical religions. Lectures: 3 hours per week for two terms.
- 379Z EASTERN RELIGIONS. (READING COURSE). Full Course. Staff
Introduction to the classical works of major Eastern Religions (Islam, Buddhism, Hinduism, etc).

- 385Z ANCIENT NEAR EASTERN RELIGIONS. Full Course. P. Garnet
The religions of ancient Mesopotamia, Egypt and the Levant during the bronze and early iron ages. This material provides our best documented examples of the religions of early civilized man and constitutes invaluable background material for the study of the religion of the Old Testament. Lectures: 3 hours per week for two terms.
- 386Z SOCIOLOGY AND THEOLOGY OF JUDAISM 100 B.C. TO 100 A.D. Full Course. P. Richardson
An examination of the variety of Jewish groupings and their divergent beliefs and practices during this crucial 200 year period, including early Christianity as one of the offshoots. Close attention is paid to conflicts and tensions between parties, and to the social factors determining relationships between Judaism and Christianity. Material includes: Apocrypha and Pseudepigrapha, Dead Sea Scrolls, New Testament, early Rabbinic writings. Lectures: 3 hours per week for two terms.
- 387Z CONTEMPORARY NORTH AMERICAN JUDAISM. Full Course. D. Rome
Its historical, philosophical and theological developments with special consideration given to twentieth century patterns and problems. Lectures: 3 hours per week for two terms.
- 389Z DEVELOPMENT OF PROTESTANT TRADITION. Full Course. P. Garnet
Introduction into the major streams of Protestant Christianity, in its origin and in its recent evolution. Lectures: 3 hours per week for two terms.
- 393A INTRODUCTION TO ORTHODOX CHRISTIANITY. Half Course. P. Moroziuk
This course will explore the religious thought and religious experience of a segment of Christianity known as Orthodox. This exploration will be conducted through the media of history, culture (art, architecture, music, theology, philosophy, literature) and spirituality-mysticism. Lectures: 3 hours per week, first term.
- 393B NORTH AMERICAN ORTHODOX CHRISTIANITY. Half Course. P. Moroziuk
A basic study of the historical, cultural and ethnic diversity of Orthodox Christianity and its status, influence and future in North American Society. Lectures: 3 hours per week, second term.
- 397Z LES ORIGINES DU CHRISTIANISME CANADIEN. Cours complet. C. Paris
Une étude historique des personnages, de la pensée religieuse et de l'atmosphère sociale à la période de la fondation du christianisme canadien. Une considération toute spéciale sera donnée aux problèmes sociaux et religieux d'aujourd'hui à la lumière de ces origines. Lectures: 3 heures par semaine pour deux semestres.

II INTRODUCTORY COURSES

Recommended to all students. A number of these courses is required of Honours and Major Students in Theological Studies in consultation with the Department.

- 400Z INTRODUCTION TO THE OLD TESTAMENT. Full Course. A. Webster
An introduction to the Old Testament experience of man with God in its various expressions (in the historical, prophetic, and wisdom literature). Emphasis will be given to the methods of Old Testament interpretation in its permanent significance for Christian thought. Lectures: 3 hours per week for two terms.

- 410Z INTRODUCTION TO THE NEW TESTAMENT. Full Course.
This course is designed to introduce the student to the methodology and the tools of New Testament interpretation as a whole. Particular emphasis will be given to the literary, historical, and doctrinal analysis of the *Gospel of Mark*. Lectures: 3 hours per week for two terms.
- 430Z INTRODUCTION TO SYSTEMATIC THEOLOGY. Full Course. C. Henkey
After an introduction into the realm, methods, tools and sources of theology, the course intends to elaborate the overall dynamic structure of the dialogical existence of man with God, which is the horizon in which man and world obtain an intelligent and positive meaning. Lectures: 3 hours per week for two terms.
- 450Z INTRODUCTION TO HISTORY OF CHRISTIANITY. Full Course. G. O'Brien
An introduction into the historical dimension of Christian existence, of its structure, methods, major driving ideas and personalities within the different epochs. Lectures: 3 hours per week for two terms.
- 470Z METHODS IN THE STUDY OF RELIGION. Full Course. S. Wesolowsky
This course will examine some of the main approaches to the study of religion, giving emphasis to the key problems and techniques of inquiry in these approaches, with special attention to the theological method in its distinctive Christian context. Lectures: 3 hours per week for two terms. (Not Offered in 1973-74).

III ADVANCED COURSES

Open to all students who have successfully completed a corresponding course on the 400 level (or its equivalent).

SCRIPTURE

- 514Z THE JOHANNINE WRITINGS. Full Course.
An extended examination of Gospel, Letters and Revelation situated within the context of first-century Christian and non-Christian religious thought. Lectures: 3 hours per week for two terms.
- 516Z THE THEOLOGY OF ST. PAUL. Full Course. W. Bedard
An historical critical examination of Paul's theological thought, tracing its development through the chronological sequence of his letters and also in the Acts of the Apostles. Lectures: 3 hours per week for two terms.
- 518Z NEW TESTAMENT CHRISTOLOGIES. Full Course. P. Richardson
Seminar dealing critically and historically with key sections of the New Testament relating to the person of Jesus of Nazareth. Their background, sources and their Christological relevance will be examined. Lectures: 3 hours per week for two terms.

SYSTEMATIC THEOLOGY

- 531Z THEOLOGY OF REVELATION. Full Course. S. Wesolowsky
This course will offer an inquiry into the concept of revelation as a central concept of fundamental theology and will deal with the questions of the possibility, knowability and mystery of revelation. It will consider the contributions of representative theologians, both Catholic and Protestant, to the development of the theology of revelation. Lectures: 3 hours per week for two terms. (Not Offered in 1973-74).
- 538Z PROBLEMS OF ESCHATOLOGY. Full Course. C. Henkey
The seminar will investigate the relationship between history and

eschatology, the problem of death, resurrection, Millenium, etc. in order to update our theology so as to be a challenge to modern mind. Lectures: 3 hours per week for two terms.

- 551Z RECENT DEVELOPMENTS IN MORAL THEOLOGY. Full Course. J. Hofbeck
This course will focus on the Protestant and Catholic theologians who have in the recent past developed changes in the approaches to moral theology and to particular moral problems. Lectures: 3 hours per week for two terms.

HISTORY OF CHRISTIANITY

- 562A POST-APOSTOLIC CHRISTIANITY (98 – 180 A.D.). Half Course. P. Jones
First term.

- 562B CHRISTIAN COMMUNITIES IN THE THIRD CENTURY (180 – 313 A.D.). Half Course. P. Jones
Second term.

- 601Z HONOURS THEOLOGY TUTORIAL. Staff
Required of honours Theology students and open to majors as well. At the end of the second year, students must choose, in consultation with their tutorial director, a research topic or other specialized work for an intense analysis during their final year. The aim of this course is an individually directed preparation for the comprehensive examination. Tutorial directors, at their discretion, may assign summer reading as part of the course work. Further, the major portion of the comprehensive examination will be devoted to the area upon which the student has concentrated.

IV RELATED COURSES

One of the required Theology Courses may be replaced by a related course.

CLASSICS

- 350Z ELEMENTARY GREEK. Full Course.
360Z ELEMENTARY HEBREW. Full Course.
390Z ELEMENTARY LATIN. Full Course.
462 INTRODUCTION TO BIBLICAL HEBREW. Full Course.
492 LATE LATIN. Full Course.

HISTORY

- 530Z PRIESTHOOD AND POLITICS IN THE MIDDLE AGES. Full Course.

SOCIOLOGY

- 425 SOCIOLOGY OF RELIGION. Half Course.

PHILOSOPHY

- 382Z PHILOSOPHY OF RELIGION. Full Course.
650Z INDEPENDENT STUDIES PROGRAM. Full Course.

Faculty of Commerce



Loyola

Faculty of Commerce

The Bachelor of Commerce Program is designed to develop problem-solvers and decision-makers in all walks of life.

A successful graduate is able to develop objectives and strategies, organize people and resources, direct an organization's activities and control these activities, and appraise objectives and strategies in the light of results.

The program has been made flexible enough to allow a student to develop according to his own needs.

Although a student is required to specialize in either Accountancy, Business Administration, Computer Science or Economics, the degree also includes exposure to the humanities and social sciences.

In the new three-year university program a student must have a minimum of fifteen recognized academic credits to receive the degree. To graduate with a Bachelor of Commerce degree with a major in Accountancy, Business Administration, Computer Science or Economics, a student must satisfy the requirements for the degree and obtain an average of 65% in all courses in the chosen major. If a student fails to maintain this average, or fails any of the courses in the major, he can graduate with a general Bachelor of Commerce degree.

Students in the Honours Program in Economics must maintain a yearly average of 65% and not less than 65% in any course in that field of concentration.

Commerce Courses for Non-Commerce Students

Students enrolled in other faculties may take Commerce courses which fall into their area of personal interest. These courses receive a full credit in their own faculty when taken as permitted elective courses.

Courses available to non-Commerce students do not require a math background. In fact, the Commerce program itself is not math-oriented, although courses requiring a math background are offered in certain areas.

Courses available to non-Commerce students do not require any prerequisites. If you require assistance in choosing a course which would be of value to you in your future career, the Commerce faculty is always available for discussion.

INTRODUCTION TO BUSINESS (Business 312Z). A brief introduction to the various areas of business: Marketing, Finance and Investment Management, Accounting, and Human Relations. **MANAGEMENT — AN ACCOUNTING APPROACH** (Accounting 310Z). A sequel to Business 312Z (see above), enables the non-Commerce student to develop a greater knowledge of Accountancy. **PRINCIPLES OF ECONOMICS** (Economics 300Z). An introduction to our economic system — a must for the contemporary manager in any field. **ADMINISTRATIVE PRACTICES** (Business 414Z). The Management of human resources is an excellent study for students who will enter any organization. **MARKETING MANAGEMENT** (Business 320Z). This course outlines the scope of marketing, and the nature of the marketing manager's job — of special interest to students in Communication Arts and anyone who is considering sales, advertising or promotional work. **BUSINESS AND SOCIETY** (Business 303) (Evening Division only). The interaction of business and society will be of particular interest to students with an Arts background. **INTRODUCTORY ACCOUNTING** (Accounting 300Z). An introductory

study of accounting principles and practice — a great asset to anyone who may have to assess financial statements or manage an organization's records. **OPERATIONS ANALYSIS** (Business 518Z). This course is designed for students who wish to apply their knowledge of calculus and statistics to business problems. It will be of special interest to Engineering or Mathematics students who may be considering an M.B.A. degree.

Students are urged to consult with the Dean of Commerce or the Chairman of the Department in which they wish to concentrate before registration. Some electives in any program may have to be selected from a list provided by Senate.

For more detailed information concerning the scope of the Commerce Faculty, write or call the Dean of Commerce and ask for the *Commerce* booklet and the *Commerce Program and Course Information Supplement*.

FACULTY DEAN

L.M. Bessner, B. Comm. (McGill), L.A. (McGill), C.A. (Professor of Accountancy) (on Sabbatical).

ACCOUNTANCY:

Professor:

L.M. Bessner, B.Comm. (McGill), L.A. (McGill), C.A. (on Sabbatical).
Dean of Commerce.

Associate Professors

MacDONALD, D.F., B. Comm. (Sir George Williams), C.A.
RIPSTEIN, H.B., B. Comm. (Sir George Williams), M.B.A. (Queen's), C.A.

Assistant Professors:

BOYLE, L.J., B.A. (Montreal), B.Comm. (Montreal), M.A. (McGill).
(Chairman).
DAUDERIS, H., B.Comm. (Montreal), C.A., Diploma in Management (McGill).
VASILKIOTI, A., B.Comm. (McGill), L.A. (McGill), C.A.

Sessional Lecturers:

GREENSPON, H.S., B.Comm. (McGill), C.A.
REINHARZ, B., B.Comm. (Sir George Williams), C.A.
TABAC, S., B.Comm (McGill), M.B.A. (Michigan), C.A.
WILLIAMS, M., B.Comm. (McGill), C.A.

BUSINESS ADMINISTRATION

Associate Professor:

KAWAJA, P., B.Comm. (McGill), M.B.A. (Columbia).

Assistant Professors:

BOYLE, L.J., B.A. (Montreal), B. Comm. (Montreal), M.A. (McGill).
(Chairman).
BARRON, P., B. Comm. (McGill), M.B.A. (Harvard), C.A.
BRUNET, J.P., B.Comm. (Montreal), M.B.A. (Queen's).
ENGLISH, G.B., B.A. (Montreal), B.C.L. (McGill), M.Comm. (Toronto),
M.B.A. (Toronto).
McPHILLIPS, D.C., B.A. (Montreal), M.B.A. (Western Ontario).
NORRIS, J.N., B.Sc. (London), M.Sc. (London).

Lecturer:

TODOROVIC, U., B.Comm. (Sir George Williams).

Sessional Lecturers:

BUNKER, D., B.A. (Sir George Williams), B.C.L. (McGill).
LANTHIER, J., B.A. (St. Francis Xavier), B.C.L. (McGill).
LECKIE, R., B.Eng. (McGill), M.Eng. (McGill).
REINHARZ, B., B.Comm. (Sir George Williams), C.A.
SIMCOE, A., B.Sc. (Toronto).
TEVEL, A., B.Comm. (Sir George Williams), M.B.A. (McMaster).
VELAN, I., B.Comm. (Montreal), M.B.A. (Michigan).

COMPUTER SCIENCE

Associate Professors:

WEST, D.C., B.Sc. (Acadia), B.A. (Acadia), M.A. (Toronto), Ph.D. (Toronto) (Chairman).

Assistant Professors:

DESAI, B.C., B.E.E. (Jadavpur University, Calcutta, India), M.S.E.E. (Purdue University).
HALTRECHT, D.G., B.Eng. (McGill), M.B.A. (Queen's).

ECONOMICS

Associate Professors:

ALVI, S.A., B.A. (Karachi), M.A. (Karachi), Ph.D. (Colorado) (Chairman).
HAYES, F.J. B.Sc. (London), Ph.D. (McGill).
LALLIER, A.G., B.A. (McGill), M.A. (Columbia), International Affairs Certificate (Russian Institute, Columbia).

Assistant Professors:

LIU, Z.R., B.A. (Soochow University Taipei, Taiwan), M.A. (Vanderbilt), Ph.D. (Colorado).
TAKAHASHI, A., B.A. (Maiji University, Tokyo), M.A. (Hawaii).
WRIGHT, B., B.A. (University of South Africa) M.A. (University of South Africa).

Accountancy

Chairman: L.J. Boyle

Courses leading to a B. Comm. with a Major in Accountancy

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Accounting 300Z	Accounting 402Z	Accounting 503A
Business 308Z	Accounting 408Z	Accounting 504Z
Elective	Business 408Z	Accounting 507B
Elective	Elective	Accounting 508Z
Elective	Elective	Business 502Z
		Elective

UNIVERSITY I: Students who have not taken Business 300Z nor an Introductory Economics course in their CEGEP programs must take them in University I. Business 308Z shall then be taken in University II.

Courses Leading to a Bachelor of Commerce with a Joint Major in Business Administration and Accounting.

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Accounting 402Z*	Accounting 408Z	Accounting 503A/507B

Business 308Z
Business 320Z
Elective
Elective

Business 408Z
Business 414Z
Elective
Elective

Accounting 504Z
Accounting 508Z
Business 502Z
Elective

** Students who have not taken introductory courses in accounting and economics nor Business 300Z in their CEGEP programmes, must take them in University I. They will then take Business 308Z and an additional accounting course in University II.*

It is highly recommended that at least one of the electives offered be taken in Computer Science.

The Institute of Chartered Accountants

Bachelor of Commerce graduates (Major in Accountancy) may apply for exemption of three of the five years of training and course work required for the C.A. certificate when registering with The Institute of Chartered Accounts of Quebec. Loyola courses may be substituted for Institute courses normally offered in the last two years of the Institute program. A minimum of two years employment with a practicing firm of Chartered Accountants is required. The subject areas required by the Institute and the courses at Loyola of Montreal that meet the requirements are listed below:

C.A. SUBJECT AREA

Accounting I
Accounting II
Accounting III
Accounting IV

Managerial Accounting I
Managerial Accounting II

Auditing I
Auditing II

Taxation I
Taxation II

Finance

Computers I
Computers II

Mathematics & Statistics II
Mathematics & Statistics III

Economics I
Economics II

Law I
Law II

Management I
Management II

LOYOLA COURSES

Accounting 300Z
Accounting 402Z and 507B or 400Z
Accounting 408Z
Not offered 1973-74

Accounting 503A
Not offered 1973-74

Accounting 508Z
Not offered 1973-74

Accounting 504Z
Not offered 1973-74

Business 408Z

Comp. Science 221/223
Not offered 1973-74

Business 300Z
Business 308Z

Economics 300Z
Business 204

Business 502Z
Not offered 1973-74

Business 414Z
Not offered 1973-74

The Society of Industrial Accountants

Bachelor of Commerce graduates (Major in Accountancy) are usually granted exemption from a large proportion of the Society's course work leading to the R.I.A. (Registered Industrial Accountant) certificate.

The Certified General Accountants' Association

Bachelor of Commerce graduates (Major in Accountancy) are usually granted exemptions from a large proportion of the Association's courses.

- 300Z **INTRODUCTION TO ACCOUNTING.** Full Course.
This course introduces how information within an organization is recorded and subsequently reported to interested parties. The use of this information for decision-making within the organization is also considered. Upon completion of the course the student should be able to prepare, understand and analyze published financial statements. This course is highly recommended for non-Commerce students considering graduate studies towards an M.B.A. degree. Lectures: 3 hours per week both terms.
- 310Z **MANAGEMENT — AN ACCOUNTING APPROACH.** Full Course.
(Not offered in 1973-74).
This is an optional course available to students in the Faculties of Arts, Science and Engineering. It is designed to cover some of the major aspects of management, including business organization, accounting concepts, financial statement analysis, management uses of accounting information, and taxation. Cases will be used to illustrate some of the above areas. Prerequisite: Business 312. Lectures: 3 hours per week both terms.
- 400Z **INTERMEDIATE ACCOUNTING.** Full Course.
(Offered only in Evening Division).
A study of the purpose, theory and practical development of financial and accounting information. Emphasis is placed on reporting to shareholders and investors, and the significance of the organizational and corporate structure. Financial statement and funds flow analyses are included. This course is restricted to those students proceeding towards certification as a professional accountant which requires Intermediate Financial Accounting. Prerequisite: Accounting 300. Lectures: 3 hours per week both terms.
- 402Z **MANAGEMENT ACCOUNTING.** Full Course.
This course is designed to develop, through verbal and written analyses of managerial control cases, understanding and skill in the use of financial data in business. An examination is made of current standards of financial reporting, but emphasis is placed on the internal use of such data as a basis for managerial decisions. Prerequisite: Accounting 300. Lectures: 3 hours per week both terms.
- 408Z **ADVANCED FINANCIAL ACCOUNTING.** Full Course.
This course examines many specialized areas of accounting. A major portion of the course is devoted to a study of business combinations such as mergers, and holding companies. Prerequisite: Accounting 402 or departmental approval. Lectures: 3 hours per week both terms.
- 503A **COST AND MANAGEMENT ACCOUNTING.** Half Course.
Extending the material previously covered in Accounting 402, this course, based primarily on lectures and problem-solving, examines the detail various techniques, systems and procedures applicable to the managerial use of accounting information for decision-making, profit planning and control. The course is directed to the needs of students who contemplate careers in professional accounting as members of recognized accounting bodies. Prerequisite: Accounting 402. Lectures: 3 hours per week first term.
- 504Z **TAXATION.** Full Course.
The Canadian taxation structure is examined with particular emphasis on theoretical and practical problems in the areas of individual and corporate

income taxes. Prerequisite: Accounting 402 or departmental approval. Lectures: 3 hours per week both terms.

- 507B **ACCOUNTING PRACTICE AND POLICY.** Half Course.
This course, based almost exclusively on the case method of instruction, is of particular relevance to students who contemplate professional accounting careers as members of recognized accounting bodies. Areas previously or concurrently covered in the field of corporate reporting are extended, and current accounting literature and current pronouncements of professional accounting bodies are examined. Course objectives include further development of theoretical concepts through which appropriate solutions to practical problems may be derived, and the development of accounting policies to meet given and general situations. Prerequisite: Accounting 402. Corequisites: Accounting 408 and Accounting 508, i.e., if either or both of these related courses have not been taken previously, they must be taken simultaneously. Lectures: 3 hours per week second term.
- 508Z **AUDITING AND INVESTIGATION.** Full Course.
This course is an introduction to the principles and techniques of auditing. The use of audit standards, procedures and internal control is related to the expression of an auditor's opinion. An analytical approach is used to illustrate the areas covered. The course also covers management services that auditors are frequently requested to undertake. Cases and problem-solving form the basis of student involvement in this course. Prerequisite: Accounting 408 or departmental approval. Lectures: 3 hours per week both terms.
- 509A **ACCOUNTING THEORY.** Half Course. (Not offered in 1973-74).
A discussion of the framework of theory underlying current accounting thinking and procedures: a study of the development and the influence of professional organizations in Accounting Theory. Areas of theoretical controversy are emphasized. Prerequisite: Accounting 408. Lectures: 3 hours per week first term.
- 511B **INFORMATION SYSTEMS AND CONTROL.** Half Course. (Not offered in 1973-74).
This course includes information systems theory, control theory and practice, responsibility accounting, and a survey of selected management science techniques. Through case analyses and discussions, the interrelationships between information and control systems, managerial style and human behaviour are established. Prerequisite: Departmental approval. Lectures: 3 hours per week second term.
- 560Z **SPECIAL TOPICS IN ACCOUNTING.** Full Course. (Not offered in 1973-74).
Intended to complement and supplement accounting courses taken previously or concurrently, this course emphasizes accounting literature and modern thought. Students are encouraged to work independently on research topics of interest to them. Enrollment is restricted and subject to departmental approval. Prerequisite: Department approval. Lectures: 3 hours per week both terms.

Business Administration

Chairman: L.J. Boyle

Courses leading to a B. Comm. with a major in Business Administration.

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Accounting	Elective	Business elective
Business 308Z	Business 408Z	Business/elective
Business 320Z	Business 414Z	Elective
Elective	Elective	Elective
Elective	Elective*	Elective

UNIVERSITY I: Students who have not taken introductory courses in Accounting and Economics nor Business 300Z in their CEGEP programs must take them in University I. They will then take Business 308Z and an additional Accounting course in University II.* It is highly recommended that students take Computer Science as an elective.

Courses leading to a Bachelor of Commerce with a Joint Major in Business Administration and Accounting.

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Accounting 402Z*	Accounting 408Z	Accounting 503A/507B
Business 308Z	Business 408Z	Accounting 504Z
Business 320Z	Business 414Z	Accounting 508Z
Elective	Elective	Business 502Z
Elective	Elective	Elective

*Students who have not taken introductory courses in accounting and economics nor Business 300Z in their CEGEP programmes, must take them in University I. They will then take Business 308Z and an additional accounting course in University II.

It is highly recommended that at least one of the electives offered be taken in Computer Science.

During their course of studies, students are encouraged to tailor programs which best satisfy their individual career aims. Some areas are:

Human Relations

The area of human resource management, which has become an integral part of the study of administration, deals with the function of human beings within the working environment. It encompasses the study of individuals, interpersonal relationships and group behaviour, and attempts to apply our psychological and sociological theories to practical business situations. An examination of business as a component part of the entire society and not merely as an economic sub-system, allows us to further explore the changing relationship of business and the individual. Courses include: Administrative Practices (Bus. 414Z), Organizational Development (501A), Human Relations (Bus. 501A, 505B), Business and Society (Bus. 303) (Evening Division only).

Marketing

The marketing function anticipates and effectively satisfies the demand for goods and services. As our society becomes more and more affluent in terms of choice in the market place, then the marketing point of view must become an integral part of the overall management process. Subjects examined include the market and its position in the environment; the product mix and its variations; the effective pricing and distribution of goods and services; and the use of promotion as a tool in stimulating demand. Courses include: Introduction to Marketing (Bus. 320Z), Sales Management (Bus. 521A), Advertising (Bus. 523B), Marketing Research (Bus. 551B), Transportation (Bus. 515) (Evening Division only).

Finance

All business organizations are faced with a two-fold financial problem — how to secure capital with which to operate the firm, and how to distribute the money to various areas of the company to achieve efficient organizational operation. The study of finance is based on the solutions to these problems. This study includes an examination of material which will help individuals make personal investment decisions. Courses include: Financial Management (Bus. 408Z), Investment Management (Bus. 530Z), Advanced Financial Management (Bus. 541B).

Business Economics and Law

A modern businessman operates his company within the framework of Canada's laws and economic environment. Students should understand the legal restrictions within which a business concern must function (e.g. tax, incorporation laws, etc.). As well, the decision-making process requires an understanding of general economic realities (e.g. inflation, pricing practices, monopolies, etc.) because a corporation is only one part of a greater economic system. Courses include: Business Economics (Bus. 204-215), Business Law (Bus. 502Z).

Quantitative Methods

As society and business become more complex, more efficient means of soliciting and analyzing information must be employed to solve the problems involved. Quantitative methods show the modern businessman how to apply mathematics in his solutions through statistical analysis and computer systems. Courses include: Statistics (Bus. 308Z), Calculus (Bus. 300Z), Operations Analysis (Bus. 518Z).

- 300Z MATHEMATICAL ANALYSIS FOR MANAGEMENT. Full Course. This course is an introduction to the mathematics useful in solving problems. Applications will be stressed. This is not a course for future mathematicians, although students who intend to go on to graduate school will find that the course gives them the required mathematical background. Prerequisite: Mathematics 101. Lectures: 3 hours per week both terms.
- 308Z BUSINESS STATISTICS. Full Course. This lecture is designed to acquaint the student with statistical methods applicable to business. Topics studied include curve fitting, correlation and regression analysis, and statistical sampling. Prerequisite: Business 300. Lectures: 3 hours per week both terms.
- 312Z INTRODUCTORY BUSINESS ANALYSIS. Full Course. This is an optional introductory lecture course available to students in the Faculties of Arts, Science and Engineering. It is designed to cover some of the major aspects of business, including financial statement preparation and analysis, finance, investment management, marketing and organizational behaviour. Lectures: 3 hours per week both terms.
- 320Z MARKETING MANAGEMENT. Full Course. An introduction to the nature and scope of the marketing manager's job. Lectures and case studies indicate how customer wants are studied in order to isolate marketing opportunities, and how firms attempt to combine products, pricing, promotion and distribution to take advantage of these opportunities. Lectures: 3 hours per week both terms.
- 408Z FINANCE. Full Course. The purpose of this course is to understand how the financial manager makes use of certain analytical tools in the analysis, planning and control

activities associated with the major financial decisions of the firm. Extensive use is made of case material. Prerequisite: Accounting 300, but Accounting 402 is highly recommended. Lectures: 3 hours per week both terms.

414Z HUMAN BEHAVIOUR. Full Course.

The objective of this course is to increase the student's awareness of individual behaviour, interpersonal relationships and group dynamics, as they influence the organization. The course will include lectures, case discussions and group projects. Lectures: 3 hours per week both terms.

470Z PRODUCTION. Full Course.

The course is designed to introduce students to the field of production management. It focuses through the use of case problems on the design and operation of production systems and on quantitative techniques that are relevant to the manufacturing process. Lectures: 3 hours per week both terms.

501A ORGANIZATIONAL DEVELOPMENT. Half Course.

The purpose of this course is to extend the Business 414 course into very *specific* areas of concern for the total Organization. It will deal with primarily three areas: labour-management relations, management systems (e.g. Management by Objectives) and Organizational Design and Change. Prerequisite: Business 414 with a "B" average, or departmental approval. Lectures: 3 hours per week first term.

502Z COMMERCIAL LAW. Full Course.

This lecture course is designed to introduce the student to the legal regulation of business activity. A substantial portion of the course will deal with the Quebec Civil Code, with emphasis on contracts, partnerships, company law, and negotiable instruments. Lectures: 3 hours per week both terms.

505B HUMAN RELATIONS. Half Course.

The objective of this course is to increase the student's awareness and development of interpersonal abilities. The course will involve a major paper related to the readings and assignments as well as a number of group exercises (at least some of which will be based on material covered in Business 501A). Prerequisite: Business 414 and Business 501A. Lectures: 3 hours per week second term.

509A ADMINISTRATION OF THE FIRM. Half Course.

(Not offered in 1973-74). Lectures: 3 hours per week first term.

511B BUSINESS POLICY. Half Course.

(Not offered in 1973-74)

This course is designed to acquaint students with major issues of company policy as they confront top management of the enterprise. It is intended to give some experience, through analysis of general management cases, in diagnosing problems and formulating policies and programs of action. Prerequisites: Departmental approval is required for registration in this course. Lectures: 3 hours per week second term.

515B TRANSPORTATION. Half Course.

(Offered only in Evening Division)

This course will deal with the economic principles underlying the various modes of transport: i.e. rail, water, motor, air and pipeline. Current problems of each will be discussed. In addition, a survey of the principles of business logistics will be covered. Cases will be utilized when possible.

518Z OPERATIONS ANALYSIS. Full Course.

A study of operations research techniques such as queueing theory, inventory theory, linear programming and the Monte Carlo method, and the application of these to marketing, production and administrative problems. Prerequisite: Business 300 and Business 308. Lectures: 3 hours per week both terms.

521A SALES MANAGEMENT. Half Course.

This course deals with (1) the principles and policies of sales organization and some typical sales organization structures; (2) sales operation, including such topics as selecting, training, compensating, supervising and stimulating salesmen; (3) sales planning, including such tasks as determining sales and market potentials, forecasting sales, preparing sales department budgets and establishing territories and quotas; (4) an analysis of sales operations and an evaluation of salesmen's productivity and effectiveness. Prerequisite: Business 320. Lectures: 3 hours per week first term.

523B ADVERTISING MANAGEMENT. Half Course.

Advertising, sales promotion and publicity are studied from the marketing management point of view. The student should gain a clear understanding of the role of advertising in the marketing framework of the firm and within the business and social environment. Some of the subjects to be covered include: advertising appeals, media selection and scheduling, advertising research and the ad agency. Lectures: 3 hours per week second term.

530Z INVESTMENT MANAGEMENT. Full Course.

This course is designed to develop an understanding of the operations of major financial markets as well as the methods used in the evaluation of the various types of securities. A major portion of the course is devoted to the principles of portfolio management. Off campus projects where students have an opportunity to work with investment managers are an integral part of the course. Prerequisite: Business 408. Lectures: 3 hours per week both terms.

541B ADVANCED FINANCIAL MANAGEMENT. Half Course.

This course is designed as an extension of Business 408. Advanced techniques of financial analysis are studied, and discussion of current financial literature is an integral part of the course. Comprehensive cases are analyzed in detail. Prerequisite: Business 408; to qualify for admission to this course a "B" average in Business 408 is required. Lectures: 3 hours per week second term.

551B MARKETING RESEARCH. Half Course.

The objective of this course is to train students in the use of marketing research techniques. The place of research in the marketing process, the role of models and the development of measurements are discussed. Emphasis is placed on planning and executing marketing studies and on the applications of marketing research. Prerequisite: Business 320. Lectures: 3 hours per week second term.

560Z SPECIAL TOPICS IN ADMINISTRATION. Full Course.

(Not offered in 1973-74)

Intended to complement and supplement business courses taken previously or concurrently, this course emphasizes business literature and modern thought. Students are encouraged to work independently on research topics of interest to them. Enrollment is restricted and subject to departmental approval. Prerequisite: Department approval. Lectures: 3 hours per week both terms.

Computer Science

Chairman: D.C West

If you want to study about computers, Loyola offers three separate course programs, in data processing (B. Comm. in Computer Science), in scientific computing (B. Sc. in Computer Science) and in computer electronics (Electrical Engineering). Or, if you merely want to satisfy your curiosity, you may take individual courses as electives in some other program.

In today's business world, there are only a few careers for pure computer experts; most employers are looking for college graduates who are primarily business men with good basic training in data processing. Your B. Comm. degree is only the first half of your computer training — the company that hires you will give you another intensive course in their own particular systems and procedures. The course of studies in data processing at Loyola has been worked out in cooperation with leading professionals and professional societies in Montreal to meet the needs of our industries.

Contrary to a widespread belief, there is very little higher mathematics involved in data processing. Most of the time, computers are just searching files, correcting records and printing reports. However, the filing systems are much bigger and more complex than the old-fashioned manual systems. A data processing employee therefore has to know what the information is used for, as well as how to handle it with his computer.

Students who intend to follow the Commerce Degree program with a Major or Joint Major in Computer Science will need to take COMP 221 and COMP 223 as prerequisites of the computer courses in the University level program. Exemption from this requirement may be allowed for students who have taken equivalent training in other institutions.

For a broader training, with less specialization in computers, you may register for the B. Comm. degree program with a Joint Major in Business and Computer Science. It is also possible to take a Double Major in these two subjects, by fulfilling the requirements for both Major programs. This will require considerable extra work and time, and must be approved by both Departments.

Courses leading to B.Comm. with a Major in Computer Science

Prerequisites: Comp. 221 and 223; Math. 101 or Busi. 300

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Accounting 300Z	Accounting 402Z	Business 518Z
Business 308Z	Business 408Z	Computer Sci. 521A
Computer Sci. 311A	Business Elective	Computer Sci. 523A
Computer Sci. 313B	Computer Sci. 421 B	Computer Sci. 525B
Elective	Computer Sci. 451A	Computer Elective (1/2)
Elective	Elective	Computer Elective
		Elective

Courses leading to B.Comm. with Joint Major in Computer Science and Business Administration.

Prerequisites: Acc. 300; Comp. 221 and 223

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Accounting Elective	Business 408Z	Business 518Z
Business 308Z	Business 470Z	Business Elective
Business 414Z	Computer Sci. 241B	Computer Sci. 523A

Computer Sci. 311A
Computer Sci. 313B
Elective

Computer Sci. 451A
Computer Elective
Elective

Computer Sci. 525B
Computer Elective
Elective

Courses leading to B.A. with Joint Major in Economics and Computer Science

Prerequisites: Economics 200

UNIVERSITY I
Computer Sci. 211 A
Computer Sci. 241 B
Economics 310Z
Economics 311
Econ. Elective
Elective
Elective

UNIVERSITY II
Computer Sci. 340Z
Computer Sci. 425B
Computer Elective (1/2)
Economics 404Z
Econ. Elective
Elective

UNIVERSITY III
Computer Sci. 424Z
Comp. or Econ. Elective
Econ. Elective
Elective
Elective

211
A/B

INTRODUCTION TO SCIENTIFIC COMPUTING. Half Course.
Approximately one week will be spent on each of the topics: Coding of numerical and alphabetic data; memories and I/O hardware; control processor; computer instructions; number systems and conversion; high-level languages, flow-charting; data structures; problem analysis; communications and terminal operation; mathematical models; applications in science and industry; automata theory. Work load: mid-term class test (20%); program (10%); term paper (30%); examination (40%). May not be used as University credit by B.Sc. Computer Science Major students. Prerequisite: No knowledge of computers is required. Students with credit for COMP 221 or 301 may not take COMP 211 for credit. Lectures: 3 hours per week, first or second term.
Text: *Introduction to Computer Science*, Walker.

221
A/B

INTRODUCTION TO BUSINESS COMPUTING. Half Course.
No previous knowledge of computers is required. Approximately one week is spent on each topic: computer development; unit record processing; computer classification; I/O devices; terminals and communications; central processor; memories and storage; flow-charts and decision tables; high-level languages; systems study; staffing and organization; controls. Work load: class tests (20%), programme (10%), term paper (30%), examination (40%). May not be used as University credit by B. Comm. Computer Science Major students. **NOTE:** Students with credit for COMP 211 or 301 may not take COMP 221 for credit. Lectures: 3 hours per week, first or second term. Text: *Computers in Business*, D.H. Sanders, 2nd edition.

223
A/B

DATA PROCESSING TECHNIQUES, Half Course. D. Haltrecht
Continuation of Computer Science 221, covering the equipment and methods used in data processing, to give the student as wide as possible acquaintance with the many different types of information-processing machinery, including unit record, forms handling, computers of all makes and models, communications and terminal equipment, OCR, MICR, COM and other special input and output devices. The basic methods for collecting, verifying, preparing and disseminating information will be studied. Work will include class tests and a field trip and report. May not be used as University credit by B. Comm. Computer Science Major students. Prerequisite: Computer Science 221. Lectures: 3 hours per week, first or second term.

- 241
A/B ELEMENTARY FORTRAN PROGRAMMING. Half Course.
The course will cover the following topics: preparing and submitting programmes; documentation, real arithmetic, integer arithmetic, mixed-mode arithmetic, simple input and output, control statements, DO loops, subscripted variables; formats; and sub-programs. Regular assignments will be given, to be prepared, run and tested and documented by each student. Typically, the assignments will require a total of 15 to 30 hours of work outside of class. This course may not be taken for credit at the University level by Engineering students or B. Sc. Computer Science Majors. Prerequisite: Computer Science 211 or 221. Lectures: Two hours per week, first or second term. Tutorial: One hour per week workshop problem sessions. Text: *Fortran IV with Watfor and Watfiv*, Cress, Dirksen & Graham.
- 301B COMPUTERS IN SOCIETY. Half Course. D. West
An introductory course for Arts students with no previous experience of computers. It covers the history of computers, the component parts of a computer, how human beings and computers pass information to each other, and what computers can (and cannot) be used for in the fields of education, research, business, medicine, art, government and the humanities. The effect of computers on society and the individual. Available for either Collegial or University credit, except for students who have taken Computer Science 211 or 221. Lectures: 3 hours per week, second term. Text: *Information Processing in Society* — National Computing Centre Limited.
- 311
A/B ELEMENTARY COBOL PROGRAMMING. Half Course. D. Haltrecht
Covers the use of problem-oriented languages, introduction to business data processing, concept of files and records, program logic and flow-charting. Introduction to the elementary coding rules of the Common Business Oriented Language (COBOL), with examples and assignments to be run on the computer. The work load is typically 4 to 10 hours per week outside of class. Prerequisite: Computer Science 221. Lectures: 3 hours per week for one term.
- 313B COBOL APPLICATIONS. Half Course. D. Haltrecht
Covers elementary file organization and design, decision tables and logic diagrams, computer aspects of systems design, and examples of computer-oriented business systems. There will be a study and report on an actual commercial application. Prerequisite: Computer Science 311. Lectures: 3 hours per week for second term.
- 340Z FORTRAN PROGRAMMING AND NUMERICAL METHODS. Full Course. B. Desai
A continuation of Computer Science 241, using problems from numerical analysis as exercises in intermediate Fortran programming. Topics to be covered: concepts of numerical errors, interpolation and curve fitting, solution of non-linear equations, numerical integration, matrix operations and solution of systems of linear equations, numerical solution of ordinary differential equations, statistical methods. Work load is typically 4 to 10 hours per week outside of class. Prerequisite: Computer Science 241; Math. 232. Lectures: 2 hours per week for two terms. Problems: 1 hour per week for two terms. Text: *Fortran IV with WATFOR and WATFIV*, Cress, Dirksen & Graham.
- 420Z COMMERCIAL SOFTWARE. Full Course.
(Offered only in Evening Division).
A study of a representative sample of the standard software packages available for use in business applications, including systems packages such

as file management, payroll, inventory, and bill-of-materials; and control packages such as critical path scheduling, linear programming and simulation. Sources of software packages; criteria for choosing packages; relative advantages and disadvantages compared with in-house programming. Class projects on the use of typical packages. Prerequisite: Computer Science 313. Lectures: 3 hours per week, both terms.

- 421 B ADVANCED COBOL PROGRAMMING. Half Course.
Continuation of Computer science 311. Further work on decision tables and flow-charting. IBM's Job Control Language, various operating systems and core dumps. The use of Cobol verbs for searching, sorting, and reporting. The use of subscripts, labels and completion codes. Programmes will be written and tested on the computer, involving the creation and updating of files. Work load is typically 4 to 10 hours per week outside of class. Prerequisite: Computer Science 311. Lectures: 3 hours per week, second term.
- 423A ASSEMBLER LANGUAGE PROGRAMMING I. Half Course.
Review of the basic concepts of the IBM 360/370 architecture and instruction repertoire. Memory access and storage. Detailed flowcharting of problems. Rules for coding assembler language programs, including use of base registers, program linking and sectioning, and the use of macro instructions. Documentation, debugging and testing of programs. Students will write and run several programs on an IBM 360/75 computer. Work load is typically 4 to 10 hours per week outside of class. Prerequisite: Computer Science 311 or 340. Lectures: 3 hours per week, first term. Text: *Assembler Language Programming*, G. Kapur.
- 424Z STATISTICAL COMPUTER APPLICATIONS. Full Course. (Offered only in Evening Division)
This course is designed to familiarize the student with the application of computers to statistical problems. Computer terminals and batch processing of Fortran programs are used to develop a working knowledge of standard programs for control charts, analysis of experimental design, sampling plans, forecasting, and statistical analyses common to many other fields. Students are expected to be familiar with elementary statistics and to be able to program in Fortran. Prerequisite: Computer Science 241; elementary statistics. Lectures: 3 hours per week for two terms.
- 425B MATHEMATICAL MODELS OF REAL SYSTEMS. Half Course.
The use of a computer to study situations occurring in the real world, with examples taken chiefly from science and industry. How models are used to study interactions between the parts of a system, to analyse the causes of observed effects, and to predict the effects of changed conditions. The scale, detail and boundaries of a model. The cyclic process of model development. Types of models available — deterministic, probabilistic, macroscopic or microscopic, optimizing. Computer methods for modelling and simulation. Prerequisite: Computer Science 241 or 311; Math. 232 or Business 308. Lectures: 2 hours per week, second term. Problems: 1 hour per week, second term. Text: *System Simulation*, G. Gordon.
- 427B ASSEMBLER LANGUAGE PROGRAMMING II. Half Course.
Continuation of Computer Science 423A. Further exercise in assembler language programming for the IBM 360/370. A study of assembler languages for other computers, including UNIVAC 9300, and DEC PDP-11. Work load is typically 4 to 10 hours per week outside of class. Prerequisite: Computer Science 423. Lectures: 3 hours per week, second term. Text: *Assembler Language Programming*, G. Kapur.

433Y PL/I PROGRAMMING Half Course (over two terms).
Study of the basic rules and the important features of the PL/I language. This will be integrated with the solution of a variety of practical computer programming problems, both scientific and commercial. Work load is typically 3 to 6 hours per week outside of class. Prerequisite: Computer Science 311 or 340. Lectures: 1½ hours per week for two terms.

451A ORGANIZATION OF DATA. Half Course. B. Desai.
A basic theoretical course in data handling. Linear lists, linked lists, orthogonal lists, trees and rings. Basic algorithms for searching, sorting, posting and updating files. The choice of proper file structure and medium for various applications. Control of job flow by the operating system in a multi-programming computer. Directories, inverted lists, and Boolean searches for large information files. Prerequisite: Computer Science 241 or 313. Lectures: 3 hours per week, first term. Text: *Data Structures and Management*, I. Flores.

521A DATA PROCESSING MANAGEMENT. Half Course.
The theory and practice of management as applied in commercial data processing. Planning for new business systems and computers; the feasibility study; the computer as an aid in planning; the organization of a data centre; staffing the data centre; job description and job specifications; maintenance and security; control methods for operation, data entry, processing and output. Prerequisite: Computer Science 313. Lectures: 3 hours per week, first term.

523A BUSINESS SYSTEMS ANALYSIS. Half Course. D. Haltrecht
For Commerce students. This course considers data processing from the point of view of systems personnel. Study areas are: (1) the uses, characteristics, and limitations of computers in business; (2) system components (cybernetic view); (3) methodology and techniques of systems analysis; (4) MIS; (5) the human factor. Class projects will cover the study of various simple applications of data processing systems, from the original concept to the production and operation of the system. Prerequisite: Computer Science 313, Accounting 300. Lectures: 2 hours per week, first term. Class Project: 1 hour per week. Text: *Business Systems*, Caruth & Rachel.

525B BUSINESS SYSTEMS DESIGN. Half Course. D. Haltrecht
A continuation of Computer Science 523. A study of the principles of data processing system design, ensuring timely, complete and accurate data collection, efficient processing, effective dissemination of information, and the evaluation, modification and control of the system. This will be illustrated by group projects and case studies. Class sections will be limited to 25 students. Prerequisite: Computer Science 523. Lectures: 3 hours per week, second term.

533A COMPUTER OPERATING SYSTEMS. Half Course.
Review of computer system organization and control. Input-output routines. Job control programs for batch processing: translating, loading, linking, execution and accounting. File control systems for parallel input-output processing. The management of interrupts, buffers, spooling and memory protection. Operating systems for multiprogramming computers. Time-sharing systems, and interactive processors with real-time applications. Prerequisite: Computer Science 451. (423 recommended). Lectures: 3 hours per week, first term.

555B INFORMATION SYSTEMS. Half Course. B. Desai.
A continuation of Computer Science 451, covering the problems of

organization, storage, search and retrieval of information stored in large data bases. Dictionary construction and look-up, automatic indexing methods, search and matching procedures, information dissemination systems, commercial data-base management systems and application. Methods of user interaction and their application in management and decision-making. Prerequisite: Computer Science 451. Lectures: 3 hours per week, second term.

561Y COMPUTER SCIENCE: SEMINAR AND PROJECT. Half Course.
The purpose of this course is to present a series of seminars of current interest by faculty, student and industry and work on a project in conjunction with a faculty member. Prerequisite: Consent of Faculty Member. Seminar: 10 hours. Project: 25 hours.

Economics

ECONOMICS

Chairman: S.A. Alvi

FIRST YEAR

HONOURS B.Comm.

Economics 309A/B & 311A/B

Economics 322Z

Accounting 402Z

Elective

Elective

Admission into the Honours Programme requires approval of the Department.

SECOND YEAR

Economics 404Z

Economics — 600 level

Economics

Business

Elective

THIRD YEAR

Economics — 600 level

Economics — 600 level

Economics

Business

Elective

MAJOR B.Comm.

Economics 309A/B & 311A/B

Economics

Accounting 402Z

Elective

Elective

Economics 404Z

Economics

Economics

Business 408Z

Elective

Economics

Economics

Business

Elective

Elective

Economics 200Z or Economics 300Z is the prerequisite for all other Economics courses, except Economics 304Z. Additional prerequisites are indicated below each course. Alternative prerequisites in Economics or other disciplines may be approved by the Department.

300Z PRINCIPLES OF ECONOMICS. Full Course. Staff

A survey of the existing economic order, with particular emphasis on the Canadian Economy. Concentration is on explaining the operation of the price system as it regulates production, distribution and consumption, and as it in turn is modified and influenced by private organization and government policy. Consideration is also given to the determination of aggregate economic activity; the monetary and banking systems in the United States and Canada; the composition and fluctuations of national income; the major conditions of economic growth, all as influenced by monetary, fiscal and other policies. Lectures: 3 hours per week for two terms. (Note: This course is not available to students who have received credit for Economics 200Z).

302Z PRINCIPLES OF ECONOMICS. Full Course. Staff

This course is for students not majoring in Economics and its main contents are the same as for Economics 300Z. The difference is that in this course there is greater emphasis on Canadian Economic and Government Policies. Lectures: 3 hours per week for two terms. (Note: Students with Economics 302Z, wishing to go into the Economics Programme may be required to do additional work.)

304Z ECONOMIC HISTORY. Full Course. B. Wright

An analysis of the economic development of western Europe, Canada and the United States. Lectures: 3 hours per week for two terms.

307B CHINESE ECONOMY. Half Course. Z.R. Liu

This course is designed to examine the Chinese Economic Development since 1949. To evaluate its system and performance from the view-point of economic efficiency, the topics which will be discussed include: The Chinese Strategy for Development; Agricultural Organization; Policy and its Contribution to Economic Growth; Development of the Industrial Sector; The Control and Allocation of Resources and National Economic Planning. Lectures: 3 hours per week, first term.

309 A/B INTERMEDIATE MICRO-ECONOMIC THEORY. Half Course. Z.R. Liu

In this course consideration will be given to such topics as: Theory and Measurement of Demand; Production Functions; Cost Analysis; Price and Output Policy under various market conditions; Factor Pricing; General Equilibrium; and the Social Welfare Optimum. Prerequisite: Economics 300Z. Lectures: 3 hours per week, given in both terms.

311 A/B INTERMEDIATE MACRO-ECONOMIC THEORY. Half Course. A. Takahashi

An analysis of the major areas of Aggregate Economics. The definition and measurement of National Income; the Theory of Income Determination; Monetary Theory; Growth and Fluctuation; Policy Implications. Prerequisite: Economics 300Z. Lectures: 3 hours per week, given in both terms.

322Z MATHEMATICS FOR ECONOMISTS. Full Course. Z.R. Liu

An introductory application of mathematics to economic analysis. Topical analytic Geometry; Differential and Integral Calculus; Differential and Difference Equations; Elements of Linear Algebra. Selected topics of economic application will be covered throughout the course. Prerequisite: Mathematics 101Z or equivalent. Lectures: 3 hours per week, both terms.

338Z CONTEMPORARY ECONOMIC ISSUES. Full Course. F.J. Hayes

An analysis of some economic issues facing Canada; Unemployment and inflation; Monopoly; Mergers; Foreign Ownership and Control; Income Distribution; Social Welfare; the Impact of U.S. Economy. Theoretical concepts will be developed as needed. Prerequisite: Economics 300Z. Lectures: 3 hours per week for two terms.

401A THEORIES OF ECONOMIC GROWTH. Half Course. (Not Offered in 1973/74)

403B PLANNING FOR ECONOMIC GROWTH. Half Course. (Not Offered in 1973/74)

404Z STATISTICAL METHODS. Full Course. A. Takahashi

The application of statistical methods to economic problems, including probability, testing hypotheses, time series, correlation and linear analysis. Prerequisite: Economics 309A/B, or permission of professor. Lectures: 3 hours per week for two terms. Text: T. Yamane Statistics & Problems to Accompany Statistics.

405B ECONOMIC FLUCTUATIONS. Half Course. (Not Offered in 1973/74)

407A MONEY AND BANKING. Half Course. B. Wright

The functions of money; money and prices; the evolution and kinds of money; the value of money; the supply of money; monetary and banking developments in Canada; monetary theory; international monetary system; monetary policy. Prerequisite: Economics 311A/B. Lectures: 3 hours per week, first term.

409B ECONOMICS OF NATURAL RESOURCES. Half Course. (Not Offered in 1973/74)

411A ECONOMICS OF TRANSPORTATION & COMMUNICATIONS. Half Course. (Not Offered in 1973/74)

- 434Z COMPARATIVE ECONOMIC SYSTEMS. Full Course.
(Not Offered in 1973/74)
- 438Z LABOUR ECONOMICS. Full Course.
(Not Offered in 1973/74)
- 448Z INDUSTRIAL RELATIONS. Full Course.
(Not Offered in 1973/74)
- 504Z ECONOMIC DEVELOPMENT OF CANADA. Full Course.
(Not Offered in 1973/74)
- 507A INTERNATIONAL TRADE. Half Course. A. Lallier
The basis of International Trade, gains from trade, factor-price equalization, the tariff, Canadian commercial policy, trade and development, economic integration. Prerequisite: Economics 309A/B-311A/B, or permission of professor. Lectures: 3 hours per week, first term.
- 509B INTERNATIONAL FINANCE. Half Course. A. Lallier
International monetary economics, foreign exchange markets, adjustment mechanisms, capital flows, balance of payments and domestic policy goals, international liquidity. Prerequisite: Economics 507A, or permission of professor. Lectures: 3 hours per week, second term.
- 535B PUBLIC FINANCE. Half Course. B. Wright
The expenditure and revenues of government; the role of government; equity and efficiency; the nature and costs of publicly-provided goods and services; the budget; public debt, federal — provincial — local government fiscal relations. Prerequisite: Economics 300Z. Lectures: 3 hours per week, second term.
- 537A CANADIAN ECONOMIC POLICY. Half Course. F.J. Hayes
An analysis of the nature of economic problems and the method of economic analysis. Attention will be given to a few selected topics, such as: Monetary Policy; Fiscal Policy; Urban Development; Housing; Environmental Problems; Transportation, etc. Both Micro and Macro topics will be included. Implications for current academic policy will be a continuing theme. Prerequisite: Economics 309A/B-311A/B. Lectures: 3 hours per week, first term.
- 539B ECONOMICS OF SOCIAL WELFARE. Half Course. F.J. Hayes
How government and other bodies attempt to reshape the economic growth and environment in greater conformity with social values. Topics include: inequality, poverty, social insurance, social assistance, medicare, education, employment opportunity, housing and urban development. Prerequisite: Economics 309A/B-311A/B. Lectures: 3 hours per week, second term.
- 541B REGIONAL ECONOMICS. Half Course.
(Not Offered in 1973/74)
- 545A STRUCTURE OF THE ECONOMY AND PUBLIC POLICY. Half Course.
(Not Offered in 1973/74)
- 563B ECONOMICS IN SOCIALISM. Half Course.
(Not Offered in 1973/74)

- 565A OPERATIONS ANALYSIS. Half Course.
(Not Offered in 1973/74)
- 611A WELFARE ECONOMICS. Half Course.
(Not Offered in 1973/74)
- 655B ADVANCED STATISTICAL METHODS. Half Course.
(Not Offered in 1973/74)
- 662Z HISTORY OF ECONOMIC THOUGHT. Full Course. A. Lallier
An analysis and critical review of the evolution of economic thought from Plato and Aristotle to post-Keynesian economics. Prerequisite: Economics 309A/B; 311A/B. Lectures: 3 hours per week, two terms.
- 665A ADVANCED MICRO-ECONOMIC ANALYSIS. Half Course. Z.R. Liu
Mathematical exposition of the theory of consume; behaviour and demand; theory of production and cost; theory of the firm and market organization theory of distribution. Prerequisite: Economics 309A/B and 322Z. Lectures: 3 hours per week, first term.
- 667A ADVANCED MONETARY AND INCOME THEORY. Half Course.
(Not Offered in 1973/74)
- 681B ADVANCED MACRO-ECONOMIC ANALYSIS. Half Course. A. Takahashi
A critical examination of selected topics in aggregative economics analysis. Topics will include: The Classical Macro-economics; the Keynesian Model of Income Determination; Theories of Investment and Inflation; Theories of Economic Growth; the Roles of Monetary and Fiscal Policies. Prerequisite: Economics 311A/B. Lectures: 3 hours per week, second term.
- 691Y HONOURS THESIS. Half Course. Staff
An Honours thesis will include independent reading and research under the supervision of a professor. The thesis will be equal to a half course credit.



faculty of science



Faculty of Science

The Faculty of Science offers a choice of three basic programs to meet the varying needs, interests and goals of students.

During the academic year 1973-74 the new three year University program will be offered in its entirety. CEGEP parallel programs will be offered at the 2nd year level.

B.Sc. PROGRAM: Designed as a general course with some concentration in one area. Recommended for students who do not plan to continue their scientific training beyond the Bachelor level. This program is offered in Chemistry, Geology, Mathematics.

MAJOR PROGRAM: Offers greater concentration in one chosen field. Designed for students capable and willing to concentrate in a designated area and who may take the qualifying year after graduation necessary to go on to higher degrees. This program is offered in Biology, Bio-Physical Education, Chemistry, Geology, Mathematics, Computer Science, Physics and Psychology.

HONOURS PROGRAM: An exacting program designed for those who will probably go on to graduate school and advanced degrees. This program is offered in Biology, Chemistry, Geology, Mathematics and Physics.

Honours students must maintain a yearly average that does not drop below 65%, and not less than 65% in each course of their field of concentration.

The student load in the above programs varies in quantity rather than in quality. The programs have been arranged with increasing work loads to permit students to obtain good marks in the courses in which they are registered. Failure to maintain a satisfactory standard will result in the student being asked to take a less concentrated program. Each department is responsible for deciding the category which a student may enter and in which he may continue. No student may claim a right to proceed in a program against the judgment of the department concerned.

Beginning in the 1973-74 academic year, a student who has interests in two science disciplines may, with the consent of both Chairmen, elect to take a Joint-Majors Program consisting of a core of courses in each discipline together with a limited number of electives. (See page 173).

Students are urged to consult the Chairman of the Department in which they wish to concentrate before registration.

FACULTY

DEAN

GRAHAM, A., S.J., B.A. (Montreal), M.A. (Toronto), S.T.L. (Gregorian)
Professor of Chemistry.

BIOLOGY

Professor

DRUMMOND, S., S.J., B.A. (Montreal), M.A. (Toronto), S.T.L.
(L'Immaculée-Conception) Ph.D. (Toronto).

Associate Professors

CRONIN, R. T., S.J., B.A. (Montreal), M.Sc. (Fordham), Ph.D. (Fordham)
(Chairman)
DHINDSA, K. S., B.Sc. (Panjab), B.Sc. Hons. (Panjab), M.Sc.Hons. (Panjab)
Ph.D. (Helsinki).

Assistant Professors

BECKMAN, C., A.A. (Stockton), A.B. (California),
M.A. (California), Ph.D. (Rutgers).
McLAUGHLIN, J. D., B.A. (New Brunswick), Ph.D. (New Brunswick).
OMRAN, R. G., B.Sc. (Cairo), M.Sc. (Alexandria), Ph.D. (Texas).

BIO-PHYSICAL EDUCATION**Assistant Professor**

ENOS, E. F., B.Sc. (Connecticut), M.Ed. (Boston
University), Ed.D. (Boston University), (Director)

Special Lecturers

ARSENAULT, P., B.P.Ed. (University of New Brunswick),
M.Sc. (University of Oregon).
BOLAND, P., B.A. (University of Manitoba),
Certificate of Education: Physical Education (Univ. of Manitoba)
KONCHALSKI, S., B.A. (Acadia University),
LL.B. (Dalhousie University)

Sessional Lecturers

SINCLAIR, G., B.P.E. (Univ. of British Columbia),
M.Sc. (Oregon), Ph.D. (Oregon)
SHARP, E., B.A. (University of Western Ontario).

CHEMISTRY**Professors**

GRAHAM, A., S.J., B.A. (Montreal), M.A. (Toronto).
NOGRADY, T., M.Sc. (Budapest), Ph.D. (Budapest)

Associate Professors

DOUGHTY, M., B.Sc. (London), Ph.D. (London). (Chairman)
EKLER, K., B.Sc. (McGill), Ph.D. (McGill).
S.T.L. (Gregorian). (Dean of Science).
McELCHERAN, D., M.Sc. (McMaster), Ph.D. (Leeds).
PALLEN, R. H., B.Sc. (Sir George Williams) M.Sc., (Western Ontario), Ph.D.
(Western Ontario).
TRUDEL, G. J., B.Sc. (McGill), Ph.D., (Leeds).
ZIENIUS, R. H., B.Sc. (McGill), Ph.D. (McGill).

Assistant Professors

HOGBEN, M., B.Sc. (London), Ph.D. (U. of Alberta).

Lecturer

BALDWIN, M., B.Sc. (University of Tasmania) M.Sc. (University of
Tasmania).

Instructor

HUI, D., B.Sc. (Loyola), M.Sc. (Toronto).

COMPUTER SCIENCE**Associate Professors**

WEST, D. C., B.Sc. (Acadia), B.A. (Acadia), M.A. (Toronto),
Ph.D. (Toronto). (Chairman).

Assistant Professors

DESAI, B. C., B.E.E. (Jadavpur University, Calcutta, India), M.S.E.E.
(Purdue University).
HALTRECHT, D. G., B.Eng. (McGill), M.B.A. (Queens).

GEOLOGY**Professor**

McDOUGALL, D., B.Sc., (McGill), M.Sc. (McGill), Ph.D. (McGill).

Associate Professor

CHOWN, E. H., B.Sc. (Queen's), M.A.Sc. (British Columbia) Ph.D. (Johns
Hopkins).

Assistant Professors

JENKINS, J. T., B.Sc. (McGill), M.Sc. (McGill).
MUKHERJI, K. K., B.Sc. (Calcutta), M.Sc. (Calcutta), Ph.D. (Western
Ontario).

MATHEMATICS**Professor**

O'CONNOR, E., S.J., B.A. (St. Mary's), M.A. (Toronto), Ph.D. (Harvard)
S.T.L. (Weston College Mass.).

Associate Professors

MAJUMDAR, K.N., B.Sc., M.Sc. (Calcutta) Ph.D. (Purdue).
PRILLO, A. J., B.Sc. (Montreal), M.A. (Toronto).
SRIVASTAVA, T. N., B.Sc. (Lucknow), M.Sc. (Lucknow), Ph.D.
(Gorakhpur, India).

Assistant Professors

BOBETIC, M. V., B.A. (University of Zagreb), M.A. (University of Zagreb)
Ph.D. (Waterloo, Ontario).
FAIERMAN, M., B.Eng. (McGill), B.Sc. (University of London), M.A.
(University of Toronto), Ph.D. (Toronto).
KEVICZKY, A., B.Sc. (Fordham), M.Sc. (City College of the City University
of New York).
KIM, H., B.Sc. (Seoul National University, Korea), M.Sc. (Seoul),
Ph.D. (McGill).
MOORE, R. C., B.Sc. (Nottingham), M.Sc. (London).
SMITH, R. A., B.A. (Loyola), M.Sc. (University of Toronto).
SORIC, J., B.Sc. (McMaster), M.Sc. (McMaster). (Chairman).

Lecturers:

KACHROO, D., F.Sc. (Kashmir), B.A. (Kashmir), B.Ed. (Kashmir), M.A.
(Saugor), M.Sc. (McGill).

PHYSICS**Professors**

BAGCHI, S. N., B.Sc. (Calcutta), M.Sc. (Calcutta), D.Sc. (Calcutta).
MacPHEE, H. J., S.J., B.A. (Montreal), M.A. (Toronto), S.T.L. (Immaculate
Conception). (on Sabbatical)

Associate Professors

EAPPEN, C. E., B.Sc. (Travancore), M.Sc. (Bombay), Ph.D. (McGill).
(Chairman).
KOVACS, R. L., Diploma Maths-Physics (Budapest), M.Sc. Physics (McGill),
M.Sc. Mathematics (McGill), Ph.D. (McGill).

Assistant Professors

DUBAS, M. S., S.J., M.Sc. (Civil Eng) (University of Alberta), Ph.L. (St.
Louis University), Ph.D. (St. Louis). M.Div. (Regis).
KALMAN, C. S., B.Sc. (McGill), M.A. (Rochester), Ph.D. (Rochester).
KOVATS, T. A., B.Sc. (Georgetown), Ph.D. (John Hopkins).
SHIN, J., B.Sc. (Swarthmore College), M.Sc. (Cornell University).

PSYCHOLOGY

Associate Professors

BABARIK, P., B.A. (Toronto), M.A. (Toronto), Ph.D. (Chicago).
 BAUER, J. H., B.A. (Sir George Williams), M.A. (Manitoba). Ph.D. (Manitoba). (Chairman).
 LADD, H. W., B.Sc. (University of Vermont), M.A. (Windsor), Ph.D. (Windsor).
 MAHEUX, V., B.A. (Montreal), M.A. (Catholic University of America), L.Ph. (Laval), Ph.D. (McGill).

Assistant Professors

CAMPBELL, J., B.A. (Reading University, Berkshire, England).
 LAMBERT, R. M., B.A. (University of Miami), Ph.D. (University of Pennsylvania).
 MOULEDOUX, E., B.A. (Tulane University), B.S.L.S. (Louisiana State), M.A. (Louisiana State).
 SEENS, R. D., B.A. (Simon Fraser), M.A. (Victoria), Ph.D. (Victoria).
 SHAMES, M. L., B.A. (University of Manitoba), M.A. (University of Manitoba), Ph.D. (University of Manitoba).
 THORPE, S., Ph.D. (Brown University) (part-time).

Joint Majors

A student who has interests in two science disciplines may elect to take a program consisting of a core program in each discipline (listed below) and three free electives. Such a program must be approved by the Chairmen of the two departments concerned. Beyond the basic minimum 15 courses, a student may take no more than two additional electives.

Such a core program does not meet the requirements of a major in either discipline, but in combination, two such core programs provide an idea of the inter-relationship between two disciplines.

Because difficulties may arise in scheduling classes, courses are not designated by year, and it is the students' responsibility to complete all required courses within three years.

CORE PROGRAMS

Geology	Biology*	Physics	Comp. Sci.*	Math*	Biophys. Educ.	Chem.
311Y	310Z	301A	223A/B	321A/B†	311A	336Z
313A	320Z	300Z or 308Z	311A/B	math elect.	313B	342A 344B
321A	420Z	320Z or 324Z	340Z	323B	361A	326A 328B
412Z	430Z	400Z or 402Z	451A	326Z	411A	(312A or 314B)
443A	540Z	407B	533A	334Z	413B	(425A or 461B)
445B	1 Biol. Elect.	408Z	551A	353A	451A	432Z or 442A and 444B
521A		414Z	½ Comp. Sci. Elect.	402Z	453B	1 Chem. Elect.
2 Geol. Elect.				1½ math	501A	
			Math 321 or 323B	Elects.	511B	
			Math 334Z		531B	
			Math 353A		551A	
					553B	

**Special* joint majors in Biology and Psychology; Mathematics and Computer Science are to replace the two cores in the disciplines. See listings under the departments concerned.

†Students having taken Math 321 (Introductory Linear Algebra) or its equivalent at the collegial level should not repeat this course.

Biology

Chairman: R. T. CRONIN, S. J.

Courses leading to a B.Sc. with a MAJOR in Biology:

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Biology 310Z	Biol 410Z or 420Z	Biology 540Z
Biology 320Z	Biology 430Z	Biol Elective
Biology 334Z	Science Elective	Biol Elective
Chemistry 326A	Science Elective	Science Elect
Chemistry 328B	#Elective	#Elective
Mathematics 301		
#Elective (1/2)		

Courses leading to a B.Sc. with Honours in Biology:

Biology 310Z	Biology 410Z	Biology 510Z
Biology 320Z	Biology 420Z	Biology 540Z
Biology 334Z	Biology 430Z	Biology 590Z
Chemistry 326A	Biol Elective	Biol Elective
Chemistry 328B	Science Elective	Science Elect
Mathematics 301	#Elective	#Elective
Science Elect (1/2)		
#Elective		

MAJOR: 15 courses, of which 8 in Biology (minimum)

HONOURS: 18 courses, of which 11 in Biology (minimum)

Electives: All electives must be chosen in consultation with the Department Faculty.

Science Elective — from any of the Science Departments,

#Elective — from any of the non-Science Departments.

Joint and Double Majors or Honours Programs: these may be arranged after consultation with and approval of the Department Chairmen concerned.

300Z FUNDAMENTALS OF HUMAN BIOLOGY. Full Course. S. Drummond
A series of lectures, demonstrations and seminars to provide a general survey of the fundamental principles of life, with special emphasis on the structure and function of man. (for non-Science students). Lectures: 3 hours per week for two terms.

310Z GENERAL BOTANY. Full Course.
A study of the structure, function and development in a selected series of avascular and vascular plants; taxonomy and ecology; growth, development and flowering; nutrition and soils; photo-synthesis and respiration. *Laboratory:* morphology and anatomy of plants; isolation and identification of selected biological substances from plant tissues. Prerequisite: Biology 230 or equivalent. Lectures: 2 hours per week for two terms. Lab: 3 hours per week for two terms.

320Z GENERAL ZOOLOGY. Full Course.
A study of the principles of morphology, physiology and development in a selected series of invertebrate and vertebrate animals. Elements of cytology, genetics, evolution, ecology and geographical distribution of animals. Prerequisite: Biol. 230 or equivalent. Lectures: 2 hours per week for two terms. Lab: 3 hours per week for two terms.

331A ENVIRONMENTAL BIOLOGY I. Half Course.
A survey of important elements of structures, balance and controls of man's environment to illustrate the complex integrated nature of the biosphere, its sensitivity to rapid change, its adaptability. (open to non-Science students). Lectures: 3 hours per week, first term.

333B ENVIRONMENTAL BIOLOGY II. Half Course.
Designed to follow Biol 331 (although it may be taken alone) the course considers various ecological crises, natural and man-made with emphasis upon resource and waste control and utilization, methods of analysis and engineering, and demographic and sociological aspects of pollution. (open to non-Science students). Lectures: 3 hours per week, second term.

334Z ECOLOGY. Full Course.
Fundamental concepts and principles governing our physical, chemical and biological environments; energy and nutrient cycling, economy and efficiencies; adaptation and evolution; organization and function of ecosystems; control and conservation; dynamics of populations, resources, waste cycling and pollution. Selected field trips for on-site sampling, experiments, observation. Prerequisite: Biol. 230 or equivalent. Lectures: 3 hours per week for two terms.

341 A/B NUTRITION AND HEALTH. Half Course.
A general course in food composition (including vitamins, minerals), its absorption and utilization; the roles of excesses, stress, microbes, toxins, preservatives, residues, drugs; food technology and diets; malnutrition, obesity, aging and other topics. *Laboratory:* group discussions, speakers, movies, field trips, projects. Prerequisite: Biol. 230. Lectures: 2 hours per week, first or second term. Lab: 3 hours per week, first or second term.

410Z PLANT PHYSIOLOGY. Full Course. R. Omran
A study of vital plant processes with emphasis on the metabolism of carbohydrates, proteins and lipids; membrane characteristics and permeability; enzymes; light and photosynthesis; respiration and fatty-acid oxidation. *Laboratory:* experiments covering a broad spectrum of basic physiological concepts and techniques; calorimetry, chromatography, extraction analyses. Prerequisite: Biol. 310. Lectures: 2 hours per week for two terms. Lab: 3 hours per week for two terms.

420Z COMPARATIVE VERTEBRATE ANATOMY. Full Course. K. Dhindsa
A study of the development and structure of the systems of a representative series of vertebrates from a comparative and evolutionary point of view, with emphasis on the mammals. *Laboratory:* survey and dissection of representatives of the principal vertebrate classes. Prerequisite: Biol. 320. Lectures: 2 hours per week for two terms. Lab: 3 hours per week for two terms.

422Z INVERTEBRATE ZOOLOGY. Full Course. D. McLaughlin, C. Beckman
A survey of the invertebrate phyla encompassing evolution, classification, morphology, physiology and ecology. Special emphasis will be placed on morphology and anatomy in the laboratory. Designed to follow Biol. 320 with a minimum of overlapping, the course is intended as a complement to Biol. 420. Prerequisite: Biol. 320. Lectures: 2 hours per week for two terms. Lab: 3 hours per week for two terms.

430Z GENERAL GENETICS. Full Course. C. Beckman
A study of the principles and processes of plant, animal and human heredity from the classical foundations through the modern to the recent molecular developments; developmental and population genetics;

evolution. *Laboratory*: directed experiments with *Drosophila* and other organisms. Lectures: 2 hours per week for two terms. Lab: 3 hours per week for two terms.

- 431A CELL BIOLOGY. Half Course. R. Cronin
A study of plant and animal cells in their structural and functional aspects; microscopic and cytochemical techniques of analysis. Prerequisite: Biol. 310, 320. Lectures: 2 hours per week, first term. Lab: 3 hours per week, first term.
- 433B CYTOGENETICS. Half Course. R. Cronin
An introduction to the study of the chromosomal bases of genetics; medical, agricultural and taxonomic applications; chromosomal abnormalities natural and induced; oncogeny. Although independent of Biol. 431, the course is designed to complement and expand it. Prerequisite: Biol. 310, 320. Lectures: 2 hours per week, second term. Lab: 3 hours per week, second term.
- 510Z MICROBIOLOGY. Full Course.
A study of the morphological and physiological characteristics of viruses, bacteria and fungi, both pathological and non-pathological, with emphasis on the medical, sanitary, agricultural and industrial importance of these micro-organisms. Prerequisite: Biol. 310. Lectures: 2 hours per week for two terms. Lab: 3 hours per week for two terms.
- 515 A/B PLANT GROWTH AND DEVELOPMENT. Half Course. R. Omran
Environmental approach to the study of plant growth, differentiation and morpho-genesis; hormones and growth regulation; physiology of reproduction, maturation and senescence; temperature, light responses and related phenomena. Prerequisite: Biol. 310. Lectures: 2 hours per week, first or second term. Lab: 3 hours per week, first or second term.
- 520Z DEVELOPMENTAL BIOLOGY. Full Course. S. Drummond
The fundamentals of comparative embryogenesis and organogenesis of selected vertebrate organisms, including man. Prerequisite: Biol. 420. Lectures: 2 hours per week for two terms. Lab: 3 hours per week for two terms.
- 522Z PARASITOLOGY. Full Course. D. McLaughlin
An examination of the evolution of parasites with emphasis on the biology and life cycles of parasitic phyla. Special emphasis will be placed on the transmission of parasites and the host-parasite relationships. Students will be required to present one seminar during the course and will be expected to care for their own laboratory animals. Prerequisite: Biol. 320. Lectures: 2 hours per week for two terms. Lab: 3 hours per week for two terms.
- 524Z INTRODUCTION TO NEUROLOGY. Full Course. S. Drummond
A study of the anatomy and physiology of the nervous systems of vertebrates, especially the mammals and man. Prerequisite: Biol. 420. Lectures: 2 hours per week for two terms. Lab: 3 hours per week for two terms.
- 527 A/B ESSENTIALS OF HISTOLOGY. Half Course. K. Dhindsa, R. Cronin
A study of the microscopic characteristics of tissues and organs of the vertebrates, especially of man; investigation of the primary tissues as components of the microscopic anatomy of the organ systems. Prerequisite: Biol. 420. Lectures: 2 hours per week, first or second term. Lab: 3 hours per week, first or second term.

- 529 A/B MICROSCOPICAL TECHNIQUES. Half Course. K. Dhindsa
Histological techniques involved in the preparation of various animal tissues for microscopic study; techniques of microscopy; photomicrography. Prerequisite: Biol. 527. Lectures: 1 hour per week, first or second term. Lab: 6 hours per week, first or second term.
- 531 A/B ADVANCED GENETICS. Half Course. C. Beckman
Directed readings and discursive seminars in classical and contemporary genetics; designed to expose students to research literature and problems, to probe in greater depth areas of particular interest, to develop a critical sense and deepen an understanding of past and current work in this field. Prerequisite: Biol. 430. Lectures: 3 hours per week, first or second term.
- 540Z ANIMAL PHYSIOLOGY. Full Course.
A study of the principle phenomena of the metabolism of cells, tissues and organs of animals and man, from the macromolecular to the macroscopic level. Prerequisite: Biol. 320. Lectures: 2 hours per week for two terms. Lab: 3 hours per week for two terms.
- 590Z PROBLEMS IN BIOLOGICAL RESEARCH. Full Course. Staff
Lectures and seminars on methods of researching scientific literature, the planning, conduct, writing and reporting of research. The core of the course will be a research project selected by the student in consultation with Staff and conducted under the supervision of an individual Staff member. (for Honours Biology students only). Lectures: 3 hours per week for two terms.

Bio-Physical Education

Director: E. ENOS

Courses leading to B.Sc. with Major in Bio-Physical education

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Bio-P.E. 301B	Bio-P.E. 411A	Bio-P.E. 501A
Bio-P.E. 311A	Bio-P.E. 413B	Bio-P.E. 511B
Bio-P.E. 313B	Biology 420Z	Bio-P.E. 521A
Biology 320Z	Bio-P.E. 431A	Bio-P.E. 531B
Chemistry 326A	Bio-P.E. 433B	Bio-P.E. 551A
Chemistry 328B	Bio-P.E. 441B	Bio-P.E. 553B
Bio-P.E. 341B	Bio-P.E. 451A	Bio-P.E. 560Z
Bio-P.E. 361A	Bio-P.E. 453B	Elective (full course)
Elective (half-course)	Elective (half-course)	

301B PHILOSOPHICAL AND SOCIOLOGICAL FOUNDATIONS OF HEALTH, PHYSICAL EDUCATION AND RECREATION. Half Course. E. Enos

In this course the significance of philosophical tenets on the development of disciplines of health education, physical education and recreation is investigated. Subject to critical analyses are the basic concepts of the philosophical schools of idealism, pragmatism and realism. The socializing effects of physical education and recreational activities also are examined. Lectures: 3 hours per week, second term. Text: *The Philosophic Process in Physical Education* — 2nd Ed., — Davis and Miller, *Sport, Culture and Society* — Loy and Kenyon.

311A INTRODUCTION TO MOTOR LEARNING. Half Course. G. Sinclair

The course is a study of the psychological factors effecting the learning of physical skills. Introductory material and literature in the field is critically reviewed. Individual variables and the nature of the learner are considered. Subject to analysis are the effects of manipulation and other external conditions, including different teaching and coaching methods. Lectures: 2 hours per week, first term. Lab: 2 hours per week, first term. Text: *The Psychology Experiment* — Anderson; *The Dynamics of Motor Skill Acquisition* — Robb; *Coaching, Athletics, and Psychology* — Singer.

313B MOTOR LEARNING AND HUMAN PERFORMANCE. Half Course. G. Sinclair

This course deals with neural mechanisms underlying the performance of motor skills. Analyzed are principles of motor integration and the perceptual processes. Covered in the courses are the effects of practice, cues, coding, reminiscence, perception, motivation, reinforcement, extinction, retention and transfer of movement patterns, general motor and sports skills. Prerequisite: Bio-P.E. 311A. Lectures: 2 hours per week, second term. Lab: 2 hours per week, second term. Text: *Motor Learning and Human Performance* — Singer; *Experiments in Movement Behavior and Motor Learning* — Cratty & Hutton

341B RECREATION AND LEISURE IN CONTEMPORARY SOCIETY. Half Course. S. Konchalski

The course provides a basis for understanding recreation and leisure as increasingly important aspects of our culture. Sociological factors receive major consideration. Relevant findings also are drawn from the fields of biology, economics, history, philosophy and psychology. In the final segment of the course, recreation and leisure services as a practical means of helping to correct social and cultural inequities are investigated. Lectures: 3 hours per week, second term. Text: *Recreation and Leisure in Modern Society* — Kraus; *Leisure and the Quality of Life* — AAHPER Press.

361A PRINCIPLES AND TECHNIQUES OF PHYSICAL EDUCATION & RECREATION. Half Course. P. Arsenault

The course involves a study of the nature, scope and meaning of physical education and recreation. Scientific principles are applied in laboratory: "learn by doing" activity periods to fundamental movement patterns and sport techniques. Experience in and an understanding of skill development theory practices and teaching sequences used in physical education and recreation programs is provided. Bio-P.E. 311A must be taken concurrently. Prerequisite: Bio-P.E. 311A must be taken concurrently. Lectures: 2 hours per week, first term. Lab: 2 hours per week, first term. Text: *Principles of Modern Physical Education, Health, and Recreation* — Updyke and Johnson; *Physical Education Syllabus* — Barrow, Crisp, and Long.

411A METHODS AND MATERIALS IN HEALTH, PHYSICAL EDUCATION AND RECREATION. Half Course. E. Enos

The course considers the needs, interests, and characteristics of pre-school, elementary and junior high school age children. Based on the above mentioned, teaching methods and materials most conducive to learning for these age groups are examined. Practical laboratory sessions offer the opportunity to experiment with and develop methodological techniques used in classrooms, community settings, gymnasias and other athletic facilities. The latest modes of movement education are of major concern in the physical education and recreation units of instruction. Prerequisite: Bio-P.E. 313B. Lectures: 2 hours per week, first term. Lab: 2 hours per week, first term. Text: *Health Education in the Elementary School* — Willgoose; *Physical Education in the Elementary School Curriculum* — Miller and Whitcomb.

413B ADVANCED METHODS AND MATERIALS IN HEALTH, PHYSICAL EDUCATION AND RECREATION. Half Course.

The needs, interests, and characteristics of adolescents, young adults, and adults are studied. Based on these factors, analyses of appropriate secondary and post-secondary teaching methods and materials are conducted. The application of principles of motor learning, cinematography, closed circuit television, and other audio-visual aids in teaching health, physical education, directing recreation programs and coaching athletic teams are considered. Prerequisite: Bio-P.E. 411A. Lectures: 2 hours per week, second term. Lab: 2 hours per week, second term. Text: *Methods in Physical Education and Health for Secondary Schools* — Daughtry; *Recreation Today* — Kraus.

431A HEALTH SCIENCE. Half Course.

The subject matter is approached with "health" viewed as the optimal functioning of the human organism. The course synthesizes and applies knowledge from biological, psychological, sociological, and medical sciences to present the student with a comprehensive understanding of personal and community health. Areas covered will include hereditary factors, growth and development, nutrition, fitness, mental and emotional functions, drugs, epidemiology, pathology, and environmental ecology. Lectures: 3 hours per week, first term. Text: *Life and Health* — Bartley et al; *Selected Readings in Health* — Bruess and Fisher

433B PERSONAL AND COMMUNITY HEALTH PROBLEMS. Half Course.

The course examines causes, symptoms, and proposes plausible steps which can be taken towards solving individual and community health problems. Consideration will be given to alcoholism, drug abuse, mental illness, smoking, sex education, communicable and non-communicable diseases, pollution, industrial and occupational health hazards. Lectures: 3

Bio-Physical Education

hours per week, second term. Text: *Education for Sexuality* — Burt and Brower; *Alcohol and Alcoholism* — Block; *Man, Health and Environment* — Hafen; *Drugs, Society, and Human Behavior* — Ray; *Critical Issues in Health* — Schaller et al.

441B PRINCIPLES AND PRACTICES OF RECREATIONAL SERVICES. Half Course. E. Sharp

The course is concerned with the fundamental concepts governing the field of recreation. The major areas analyzed include: programming, principles of creative leadership, and conservation of natural resources. The scope and impact of present and future recreational services are examined. Model programs are studied in community, camp, school, business, outdoor education, and rehabilitation centres. Prerequisites: Bio-P.E. 341B, and Bio-P.E. 413B should be taken concurrently. Lectures: 3 hours per week, second term. Text: *Introduction to Community Recreation* — Butler; *Principles and Practices of Recreational Service* — Shivers.

451A HUMAN ANATOMY. Half Course.

The course is a systematic study of gross and functional anatomy with an emphasis on the locomotor systems and their controls. Lectures: 2 hours per week, first term. Lab: 2 hours per week, first term. Text: *Introduction to Human Anatomy* — Francis.

453B HUMAN PHYSIOLOGY. Half Course.

The course is a study of organ systems of the human body, with emphasis on the functional organization and integration of these systems for maintaining homeostasis. The dynamics of muscle and nerve, the nervous system, circulation, respiration, digestion, metabolism, excretion, special senses, and endocrine function will be analyzed. In laboratory sessions, students will monitor and examine the dynamic qualities of man, using themselves and atypical individuals as subjects. Lectures: 2 hours per week, second term. Lab: 2 hours per week, second term. Text: *Modern College Physiology* — Stacy and Santolucito; *Physiology Laboratory Manual* — Tuttle et al.

501A ADAPTED, CORRECTIVE, REHABILITATIVE PHYSICAL EDUCATION AND RECREATION. Half Course. (To be offered in 1974-75).

511B TESTS, MEASUREMENT AND RESEARCH PROCESSES IN HEALTH, PHYSICAL EDUCATION AND RECREATION. Half Course. (To be offered in 1974-75).

521A ORGANIZATION AND ADMINISTRATION OF COMMUNITY AND SCHOOL HEALTH, PHYSICAL EDUCATION, AND RECREATION PROGRAMS. Half Course. (To be offered in 1974-75).

531B PREVENTIVE MEDICINE AND GERIATRICS. Half Course. (To be offered in 1974-1975).

551A KINESIOLOGY. Half Course. (To be offered in 1974-75).

553B PHYSIOLOGY OF EXERCISE. Half Course. (To be offered in 1974-75).

560Z PRACTICUM. Full Course. (To be offered in 1974-75).

Chemistry

Chairman: M. DOUGHTY

Courses leading to an Honours B.Sc. in Chemistry

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Chemistry 312A	Chemistry 422Z	Chemistry 423B or
Chemistry 314B	Chemistry 432Z	Chemistry 534A
Chemistry 336Z	Chemistry 433A	Chemistry 552Z
Chemistry 322Z	Chemistry 435B	Chemistry 531B
Chemistry 342A	Chemistry 442A	Chemistry 532Z
Chemistry 344B	Chemistry 444B	Chemistry Elective
Mathematics 332	Science Elective	Chemistry Elective
Elective	Elective	Elective

Courses leading to a Major B.Sc. in Chemistry

Chemistry 312A	Chemistry 422Z	Chemistry 432Z
Chemistry 314B	Chemistry 442A	Chemistry 435B
Chemistry 322Z	Chemistry 444B	Chemistry Elective
Chemistry 336Z	Chemistry 433A	Science Elective
Chemistry 342A	Chemistry 452Z	Elective
Chemistry 344B	Elective	
Mathematics 332		
Elective		

Courses leading to a B.Sc. in Chemistry

Chemistry 312A	Chemistry 342A	Chemistry 442A
Chemistry 314B	Chemistry 344B	Chemistry 444B
Chemistry 326A	Chemistry 452Z	Chemistry Elective
Chemistry 328B	Chemistry Elective	Chemistry Elective
Chemistry 336Z	Science Elective	Elective
Mathematics 332	Elective	Elective
Computer Science (Half)		
Elective		

Courses leading to a Major in Biochemistry and Medicinal Chemistry

Chemistry 326A	Biology 540Z	Biochemistry 590Z
Chemistry 328B	Biology 431A	Pharmacology
Chemistry 338Z	Biology 510Z	Medicinal Chemistry 592Z
Chemistry 342A	Biochemistry 490Z	Elective
Chemistry 344B	Chemistry 442A	Science Elective
Biology 320Z	Elective	
Mathematics 301		
Elective		

In the above programmes, Elective means a Full elective outside the Faculty of Science. Science Elective means a full elective inside the Faculty of Science but outside the Department of Chemistry. Chemistry Elective means a full elective inside the Chemistry Department.

A number of courses, e.g. Chemistry 312A, Chemistry 342A and Chemistry 326A will be made available in January 1974, for January graduates from public CEGEPS. They will be given if a sufficient number of students warrants it. They will then be designated Chemistry 312B, 342B and 326B.

Joint Majors with other disciplines within the Faculty of Science may be arranged in particular cases by consultation with the Departmental Chairmen.

300Z CONCEPTS IN SCIENCE. Full Course. R. H. Pallen

A science course specially designed for non-science students. The aim is to give the student an appreciation of science and an understanding of the methodology of science. Several concepts will be studied to show how they began and developed up to the present time, such as heat, light, atomic theory, etc. Some ideas in astronomy, environmental issues and the origin of life will also be included. The emphasis is on understanding the nature of science, not in producing amateur scientists. Lectures: 3 lectures per week for two terms.

312A INTRODUCTORY INORGANIC CHEMISTRY. Two Half Courses. R. H. Pallen

314B Two half courses to be taken successively. The two courses cover the following topics, development of atomic structure, wave mechanical orbitals, periodicity of properties. Properties of ionic compounds, covalent compounds — molecular orbital treatment. Spectroscopy. Chemistry of the non-transitional elements and relation to atomic structure. Prerequisite: Chem. 112. Lectures: 3 hours per week for first and second term. Text: *Theoretical Inorganic Chemistry*, Day & Delbin. (Van Nostrand).

315A PHOTOGRAPHIC CHEMISTRY. Half Course. D. Hui

This is a combined laboratory and lecture course complementary to Communication Arts 305A/B (Dynamics of Visual Representation) and Physics 315A and 317B. In this course the basic fundamental principles of chemistry involved and applied to photographic process are discussed and demonstrated. This course is presented to non-science students only. Lab: 3 hours per week, first term.

317B PHOTOGRAPHIC CHEMISTRY. Half Course. D. Hui

This is a continuation of Chemistry 315A in which the photographic theory is treated more deeply in the chemical aspects. It establishes a firm and thorough knowledge of chemistry as applied to photographic process. This course is presented to non-science students only. Lab: 3 hours per week, second term.

322Z ORGANIC CHEMISTRY THEORY. Full Course. M. Doughty

A basic course in organic chemistry, it establishes a firm and thorough basis of bonding theory, stereochemistry and the correlations of molecular structure with reactivity before discussing organic reactions from a mechanistic point of view. The course is the first half of a four-term programme in organic chemistry. Lectures: 3 hours per week for two terms. Lab: 3 hours per week, second term. Text: *Organic Chemistry* — 3rd Ed., Hendrickson, Cram & Hammond, (McGraw-Hill); *Selected Experiments in Organic Chemistry* — 2nd Ed., Helmkamp & Johnson (Freeman & Company).

326A ORGANIC CHEMISTRY. Two Half Courses. M. Baldwin, A. Graham, D. Hui

328B Two half courses, to be taken successively. An introduction to organic chemistry with biological emphasis, covering concepts of molecular structure, stereochemistry, basic reaction mechanisms, reactions of hydrates, and the common functional groups, and practical applications to such groups, as detergents, foods, drugs & compounds of biological interest. Prerequisite: Chemistry 112. Lectures: 3 hours per week, first and second term. Lab: 3 hours per week, first and second term.

336Z PHYSICAL CHEMISTRY. Full Course. G. J. Trudel

Treatment of properties of gases. Kinetic molecular theory of gases. First law of thermodynamics, Thermochemistry, Entropy and the second and third laws of thermodynamics. Free energy and chemical equilibria.

Properties of liquids, crystals, phase equilibria, the colligative properties, the rates and mechanisms of chemical reactions, the nature of electrolytes in solution. The thermodynamics of solutions of electrolytes. Prerequisite: Chemistry 112. Lectures: 3 hours per week, for two terms. Text: *Physical Chemistry* — 2nd Ed. — Barrow (McGraw-Hill).

338Z PHYSICAL CHEMISTRY FOR BIOCHEMISTRY DEGREE STUDENTS. Full Course. G. J. Trudel

Thermodynamics: heat, work, energy, entropy, free energy and chemical equilibria. Properties of liquids. Transport processes: diffusion, sedimentation, viscous flow. Properties of electrolyte and non-electrolyte solutions. Chemical kinetics. Prerequisite: Introductory Chemistry Course. Lectures: 3 hours per week for two terms.

342A ANALYTICAL CHEMISTRY. Half Course. G. J. Trudel

Treatment of analytical data. Gravimetric and Volumetric Analysis. Acid-base and oxidation-reduction titrations. Theory of precipitation and complex formation analysis. The lab provides experience in use of volumetric, gravimetric and simple instrumental methods of analysis. Prerequisite: Chemistry 112 & Chemistry 322 or 326 and 336 unless taken concurrently. Lectures: 3 hours per week, first term. Lab: 3 hours per week, first term. Text: *Quantitative Analysis* — Fischer & Peters (Saunders).

344B ANALYTICAL CHEMISTRY. Half Course. R. H. Zienius

Introduction to instrumental methods of analysis including emission spectroscopy, atomic and molecular spectrophotometry, infra-red and nuclear magnetic resonance methods, chromatography, and electrochemical methods. Problems and interpretation of simple IR and NMR spectra form a part of this course. The laboratory is a continuation of that given in Chemistry 342A with the addition of several basic instrumental experiments. Prerequisite: Chemistry 112 & 342A. (Also Chem. 322 or 326 & 336 unless taken concurrently). Lectures: 3 hours per week, second term. Lab: 3 hours per week, second term. Text: Willard, Merritt and Dean, *Instrumental Methods of Analysis* (Van Nostrand).

411B ENVIRONMENTAL CHEMISTRY. Half Course. R. H. Pallen

General aspects of environment and ecology; cycles in nature. The chemistry of pollution, air-pollution, water pollution, water treatment. Compounds treated; oxides of carbon, nitrogen and sulfur, hydrocarbons and types of particles. Photochemical and chain reactions. Mercury, lead, oil, detergents, insecticides will be examined from both their general chemistry and their contribution to pollution. Prerequisite: Chemistry 112 or equivalent. Lectures: 3 hours per week, second term.

413A ADVANCED INORGANIC CHEMISTRY. Half Course. M. G. Hogben

This course will include certain topics pertinent to the chemistry of the Transition Elements, e.g., Magnetochemistry, Absorption Spectroscopy, Ligand-Field Theory, Stereochemistry (structural and optical), Molecular Orbital treatment of π bonded complexes, reaction mechanisms, stability constants, inner-transition elements, Geochemistry, experimental techniques. Prerequisite: Chemistry 312. Lectures: 3 hours per week, first term.

415B ORGANOMETALLIC CHEMISTRY. Half Course. M. G. Hogben

Organic compounds of Group I and II metals such as lithium and Grignard Reagents, effective Atomic Number Rule, sigma bonded compounds; for example, fluorocarbon and aliphatic derivatives, π Synergic bonded

compounds, Bridged and sandwich bonded structures and those involving olefins, acetylenes and alkyls. Prerequisite: Chem. 312 and Chem. 322. Lectures: 3 hours per week, second term.

- 422Z **ORGANIC CHEMISTRY.** Full Course. T. Nogrady
A confirmation of Chemistry 322, discussing organic reaction mechanisms and synthetic methods at an advanced level. Prerequisite: Chemistry 322. Lectures: 3 hours per week for two terms. Lab: 3 hours per week, first term. Text: *Organic Chemistry* — 3rd Ed., Hendrickson, Cram & Hammond (McGraw-Hill). *Selected Experiments in Organic Chemistry* — Helmkamp & Johnson (Freeman).
- 423B **ADVANCED ORGANIC LABORATORY.** Half Course. Staff
Individualized problems, syntheses or structure determinations based on the study of research literature. Advanced techniques (e.g. Catalytic and high-pressure reactions, vacuum techniques, etc.) are stressed, as well as the extensive use of spectroscopic methods. Prerequisite: Chemistry 322 & 422 Laboratory. Lab: 4 hours per week, second term.
- 425A **CHEMISTRY OF CARBOHYDRATES & PROTEINS.** Half Course. M. Baldwin
Structures, configurations & conformations of monosaccharides, reactions of monosaccharides, polysaccharides and glycosides. Chemistry of amino acids, the peptide bond, synthesis and degradation of peptides, protein structure. Prerequisite: Chemistry 326 or 322. Lectures: 3 hours per week, first term.
- 427B **BIO-ORGANIC CHEMISTRY.** Half Course. T. Nogrady
Chemistry and biological implications of a variety of natural products like lipids, terpenes, carotenoids. Heterocyclic compounds and alkaloids are discussed in detail. Prerequisite: Chemistry 326 or equivalent. Lectures: 3 hours per week, second term.
- 432Z **PHYSICAL CHEMISTRY LABORATORY.** Full Course. D. McElcheran
The first term: Treatment of Experimental Data. Experimental Error, Graphical and Numerical Methods, Problems using literature data. Spectra analysis. Use of the computer is encouraged, some knowledge of Fortran is desirable. Second Term: Laboratory experiments in Physical Chemistry. Prerequisite: Chemistry 336. Lectures: 3 hours per week, first term. Lab: 4 hours per week, second term.
- 433A **PHYSICAL CHEMISTRY-CHEMICAL THERMODYNAMICS.** Half Course. K. Ekler
A second course in thermodynamics. First, Second and Third Laws. Activities. Electrolyte and Non-Electrolyte Solutions. Prerequisite: Chemistry 336. Lectures: 3 hours per week, first term. Text: *Thermodynamics*, Lewis & Randall (McGraw-Hill).
- 435B **STATISTICAL MECHANICS.** Half Course. D. McElcheran
Kinetic theory of Gases, Maxwell-Boltzmann Distribution, Transport Properties. Theory of Reaction Rates, Colloidal State and Surface phenomena. Prerequisite: Chemistry 433A. Lectures: 3 hours per week, second term.
- 437A **ATOMIC AND MOLECULAR SPECTRA.** Half Course. D. McElcheran
A descriptive course of atomic and molecular spectra and structure. Prerequisite: Chemistry 336Z. Lectures: 3 hours per week, first term.
- 439A **INTRODUCTORY PHYSICAL CHEMISTRY.** Half Course. D. McElcheran
This Introductory Physical Chemistry course is for Biology students only.

Lectures: 3 hours per week, first term. Text: *Physical Biochemistry*, Van Holde.

- 442A **ADVANCED ANALYTICAL CHEMISTRY.** Half Course. R. H. Zienius
A continuation of the study of modern instrumental methods of analysis following that in Chemistry 342B, including electrochemical methods, separation techniques, mass spectrometry, Raman spectroscopy, fluorescence spectrometry, turbidimetry, Nephelometry and Electron Spin Resonance. Problems and interpretation of IR, NMR and MS spectral data form an integral part of this course. The laboratory provides practice in the use of modern analytical instruments related to the techniques discussed in Chemistry 342A as well as this course. Prerequisite: Chemistry 342A, 344B. Lectures: 3 hours per week, first term. Lab: 3 hours per week, first term. Text: Willard, Merritt and Dean, *Instrumental Methods of Analysis*.
- 444B **ADVANCED ANALYTICAL CHEMISTRY.** Half Course. M. Baldwin, R. H. Zienius
A further study of modern instrumental methods of analysis including X-Ray Spectroscopy, Radiochemical Methods, Refractometry, Polarimetry, Thermal Analysis, miscellaneous topics. The laboratory is devoted to the identification of organic compounds using classical methods of analysis as well as spectral and chromatographic data. Prerequisite: Chemistry 442A. Lectures: 3 hours per week, second term. Lab: 3 hours per week, second term.
- 452Z **INDUSTRIAL CHEMISTRY.** Full Course. R. H. Zienius
Brief outline of the chemical industry. Development of industrial processes. Unit operations and equipment. Calculations of material and energy balances in a plant. Petroleum, petrochemicals, plastics, fibres, fertilizers, rubbers, pharmaceuticals, pulp and paper, wood chemicals and pollution are some of the specific topics discussed. Prerequisite: Chemistry 322 or 326. Lectures: 3 hours per week for two terms. Lab: No formal labs. However, seven one-half day plant tours are an integral part of this course.
- 461B **MOLECULAR BIOCHEMISTRY.** Half Course. T. Nogrady
Energy flow in biological systems. Energy yielding processes, respiration, photosynthesis. Energy transfer, the role of ATP. Contractile systems, action potentials, transport phenomena. Neurotransmission. Prerequisite: Chem. 326 or Chem. 422. Lectures: 3 hours per week, second term. Text: *Bioenergetics*, Lehninger, (Benjamin).
- 490Z **BIOCHEMISTRY.** Full Course. T. Nogrady
The molecular components of cells: carbohydrates; amino acids and proteins; lipids, lipoproteins and membranes, carotenoids, steroids. Nucleotides and nucleic acids. Catabolism: glycolysis, Krebs cycle, electron transport. Photosynthesis. Prerequisite: Chemistry 326Z, and 338Z or equivalent. Lectures: 3 hours per week for two terms.
- 523A **CHEMISTRY OF HIGH POLYMERS.** Half Course. R. H. Pallen
A detailed study of the mechanisms involved leading to the formation of polymeric species includes condensation, free radical, cationic, anionic and coordination mechanisms. Some physical systems and examples of polymers will be discussed and examined. Some general considerations concerning reactivity and reactions of macromolecules. Prerequisite: Chemistry 322. Lectures: 3 hours per week, first term.

- 525B CHEMISTRY OF HIGH POLYMERS. Half Course. G. J. Trudel
Definition and description of different polymer molecules, monomer-polymer differences; polymerization mechanisms and kinetics — (M. W. Dist.); conformation and dimensions of random polymer chains; thermodynamics of polymer solutions; analytical methods of polymer science; thermodynamics of rubber elasticity; the crystalline state; mechanical properties of high polymers; structure and function of biopolymers. Lectures: 3 hours per week, second term. Text: F. Billmeyer, Jr., *Textbook of Polymer Science*, 2nd Ed.
- 531B ELECTROCHEMISTRY. Half Course. K. Ekler
Debye-Hückel Theory. Electrolytic conduction. Transport properties in Electrolytes. Electrochemical cells. Thermodynamics and kinetics of electrochemical system. Overvoltage. Prerequisite: Chem. 336Z and 433A. Lectures: 3 hours per week, second term.
- 532Z THEORETICAL CHEMISTRY. Full Course. D. McElcheran
Introductory matrix algebra and group theory. Quantum mechanics and the special functions. Perturbation methods, atomic structure and spectra. Theories of molecular bonding, molecular structure and spectra. Inter-molecular forces and elements of liquid state and solid state theory. Rate processes, photochemistry and chain reactions. Lectures: 3 lectures per week, both terms plus monthly individual tutorial. Text: *Quantum Chemistry*, Levine.
- 534A ADVANCED PHYSICAL CHEMISTRY LABORATORY. Half Course. D. McElcheran
Lab: 4 hours per week, first term.
- 541A NATURE & ANALYSIS OF POLLUTANTS. Half Course. R. H. Zienius
A survey of major industrial and municipal pollutants of concern to modern man — their effect and analysis. The course includes a description of measuring systems, sampling procedures, concentration and separation techniques, and of methods commonly used to analyze pollutants. Topics such as continuous monitoring systems, automated analyses, data analysis, and pollution control techniques are also discussed. Prerequisite: An introductory analytical and an introductory organic chemistry course. Lectures: 3 hours per week, first term.
- 552Z SENIOR THESIS. Full Course. Staff
Honours chemistry students and majors with permission of the Department undertake a research project in any branch of chemistry, directed individually by a faculty member, and submit a written detailed report.
- 590Z ADVANCED BIOCHEMISTRY. Full Course. T. Nogrady
Biosynthesis of carbohydrates, lipids and amino acids. DNA, RNA, protein biosynthesis and its regulation. Contractile systems. Active transport and bio-electric potentials. Enzymes: kinetics, mechanism, structure and regulation. Lectures: 3 hours per week for two terms. Lab: 3 hours per week for two terms.
- 592Z MEDICINAL CHEMISTRY. Full Course. T. Nogrady
Types of drug action. Influence of physicochemical properties. Pharmacological effect of specific structural moieties and stereochemical aspects. Drug-receptor interactions, topography of receptors. Theories and molecular mechanisms of drug action. Lectures: 3 hours per week for two terms.

Computer Science

Chairman: D. C. WEST

If you want to study about computers, Loyola offers three separate course programs, in data processing (B.Comm. in Computer Science), in scientific computing (B.Sc. in Computer Science), and in computer electronics (Electrical Engineering). Or, if you merely want to satisfy your curiosity, you may take individual courses as electives in some other program.

For those students more interested in the scientific aspects of Computer Science Loyola has developed a program leading to a Bachelor of Science degree with a major in Computer Science. The basic objective of this program is to develop the potential computer scientist and reveal to the practicing scientist/engineer the tremendous utility of the computer in his work.

The courses and the choice of electives in related disciplines such as mathematics, statistics, natural sciences and engineering, are designed to provide students with the varied scientific background needed by a computer scientist. Students in this program study the use of computers in solving problems of the scientific and engineering fields, learn about the principles relating to languages and techniques, and about the computing machines themselves.

Students who intend to follow the Science Degree program with a Major or a Joint Major in Computer Science will need to complete the introductory courses COMP 211 and COMP 241 before taking the University level computer courses. Exemption from this requirement may be allowed for students who have had equivalent training in other institutions. A full course in calculus (MATH 232 or equivalent) is also prerequisite for the University-level mathematics courses in this program.

If you are interested in more than one field of study, you may register for a B.Sc. degree with a Joint Major in Computer Science and any other branch of Science. This provides the student with a broader knowledge, but cannot give him as complete and detailed a study of either subject as he would obtain from a Major program. A Joint Major program in Mathematics and Computer Science is outlined below. Joint Majors with Biology, Chemistry, Geology, or Physics can be arranged by combining the Joint Major Core Programs for Computer Science with the core program of the other Department concerned.

Courses leading to B.Sc. with a Major in Computer Science

Prerequisites: Math 232; Comp 211 and 241

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Computer Sci 340Z	Computer Sci 223	Computer Sci 533A or
Mathematics 334Z	Computer Sci 311B	Engin 640
Mathematics 353A	Computer Sci 451A	Computer Sci. 551A
Math 321/323 B	Computer Sci Elective	Computer Elective,
Natural Sci Elective	Mathematics 402Z	400 or 500 level
Elective	Natural Sci Elective	Engin 135
	Elective	Nat. Sci. Elective
		Elective

Courses leading to a B.Sc. with Joint Major in Mathematics and Computer Science

Prerequisites Math 232; Comp 211 and 241

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Comp. 340Z	2 Comp. Sci. half courses*	Comp. 424Z
Math 321/323A	Math 326Z	2 Comp. Sci. half courses*
Math 334Z	Math 402Z	Math Elective
Math 340Z	Math 353A/half elective	Comp. Elective
Elective	Elective	Elective

*To be chosen from: Comp. 423A, 425B, 427B, 433Y, 451A, 551A, or 561Y.

Courses leading to B.A. with Joint Major in Economics and Computer Science

Prerequisites: Economics 200

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Computer Sci. 211A	Computer Sci. 340Z	Computer Sci. 424Z
Computer Sci. 241B	Computer Sci. 425B	Comp. or Econ. Elective
Economics 310Z	Computer Elective (1/2)	Econ. Elective
Economics 311	Economics 404Z	Elective
Econ. Elective	Econ. Elective	Elective
Elective	Elective	
Elective		

Joint Major Core Program for Computer Science

Prerequisites: Computer Science 211 and 241; Mathematics 232

Computer Science 340Z	Computer Science 223A	Computer Science 533A
Mathematics 334Z	Computer Science 311B	Computer Science 551A
	Mathematics 353A	Computer Sci. Elective
	Mathematics 321 or 323B	

221
A/B INTRODUCTION TO BUSINESS COMPUTING. Half Course.
No previous knowledge of computers is required. Approximately one week is spent on each topic: computer development; unit record processing; computer classification; I/O devices; terminals and communications; central processor; memories and storage; flow-charts and decision tables; high-level languages; systems study; staffing and organization; controls. Work load: class tests (20%), programme (10%), term paper (30%), examination (40%). May not be used as University credit except by B.Comm. Computer Science Major students. Note: Students with credit for COMP 211 or 301 may not take COMP 221 for credit. Lectures: 3 hours per week, first or second term. Text: *Computers in Business*, D. H. Sanders, 2nd edition.

241
A/B ELEMENTARY FORTRAN PROGRAMMING. Half Course.
The course will cover the following topics: preparing and submitting programmes; documentation; real arithmetic; integer arithmetic, mixed-mode arithmetic, simple input and output; control statements; DO loops; subscripted variables; formats; and sub-programs. Regular assignments will be given, to be prepared, run and tested and documented by each student. Typically, the assignments will require a total of 15 to 30 hours of work outside of class. This course may not be taken for credit at the University level by Engineering students or B.Sc. Computer Science Majors. Prerequisite: Computer Science 211 or 221. Lectures: Two hours per week, first or second term. Tutorial: One hour per week workshop

problem sessions. Text: *Fortran IV with Watfor and Watfiv*, Cress, Dirksen & Graham.

301B COMPUTERS IN SOCIETY. Half Course. D. West
An introductory course for Arts students with no previous experience of computers. It covers the history of computers, the component parts of a computer, how human beings and computers pass information to each other, and what computers can (and cannot) be used for in the fields of education, research, business, medicine, art, government and the humanities. The effect of computers on society and the individual. Available for either Collegial or University credit, except for students who have taken Computer Science 211 or 221. Lectures: 3 hours per week, second term. Text: *Information Processing in Society* — National Computing Centre Limited.

311
A/B ELEMENTARY COBOL PROGRAMMING. Half Course D. Haltrecht
Covers the use of problem-oriented languages, introduction to business data processing, concept of files and records, program logic and flow-charting. Introduction to the elementary coding rules of the Common Business Oriented Language (COBOL), with examples and assignments to be run on the computer. The work load is typically 4 to 10 hours per week outside of class. Prerequisite: Computer Science 223. Lectures: 3 hours per week for one term.

340Z FORTRAN PROGRAMMING AND NUMERICAL METHODS. Full Course. B. Desai
A continuation of Computer Science 241, using problems from numerical analysis as exercises in intermediate Fortran programming. Topics to be covered: concepts of numerical errors, interpolation and curve fitting, solution of non-linear equations, numerical integration, matrix operations and solution of systems of linear equations, numerical solution of ordinary differential equations, statistical methods. Work load is typically 4 to 10 hours per week outside of class. Prerequisite: Computer Science 241; Math. 232. Lectures: 2 hours per week for two terms. Problems: 1 hour per week for two terms. Text: *Fortran IV with WATFOR and WATFIV*, Cress, Dirksen & Graham.

423A ASSEMBLER LANGUAGE PROGRAMMING I. Half Course.
Review of the basic concepts of IBM 360/370 architecture and instruction repertoire. Memory access and storage. Detailed flowcharting of problems. Rules for coding assembler language programs, including use of base registers, program linking and sectioning, and the use of macro instructions. Documentation, debugging and testing of programs. Students will write and run several programs on an IBM 360/75 computer. Work load is typically 4 to 10 hours per week outside of class. Prerequisite: Computer Science 311 or 340. Lectures: 3 hours per week first term. Text: *Assembler Language Programming*, G. Kapur.

424Z STATISTICAL COMPUTER APPLICATIONS. Full Course.
(Offered in the Evening Division only). This course is designed to familiarize the student with the application of computers to statistical problems. Computer terminals and batch processing of Fortran programs are used to develop a working knowledge of standard programs for control charts, analysis of experimental design, sampling plans, forecasting, and statistical analyses common to many other fields. Students are expected to be familiar with elementary statistics and to be able to program in Fortran. Prerequisite: Computer Science 241; elementary statistics. Lectures: 3 hours per week for two terms.

- 425B **MATHEMATICAL MODELS OF REAL SYSTEMS.** Half Course.
The use of a computer to study situations occurring in the real world, with examples taken chiefly from science and industry. How models are used to study interactions between the parts of a system, to analyze the causes of observed effects, and to predict the effects of changed conditions. The scale, detail and boundaries of a model. The cyclic process of model development. Types of models available — deterministic, probabilistic, macroscopic or microscopic, optimizing. Computer methods for modelling and simulation. Prerequisite: Computer Science 241 or 311; Math. 232 or Business 308. Lectures: 2 hours per week, second term. Problems: 1 hour per week, second term. Text: *System Simulation*, G. Gordon
- 427B **ASSEMBLER LANGUAGE PROGRAMMING II.** Half Course.
Continuation of Computer Science 423A. Further exercise in assembler language programming for the IBM 360/370. A study of assembler languages for other computers, including UNIVAC 9300, and DEC PDP-11. Work load is typically 4 to 10 hour per week outside of class. Prerequisite: Computer Science 423. Lectures: 3 hours per week, second term. Text: *Assembler Language Programming*, G. Kapur
- 433Y **PL/I PROGRAMMING.** Half Course.
Study of the basic rules and the important features of the PL/I language. This will be integrated with the solution of a variety of practical computer programming problems, both scientific and commercial. Work load is typically 3 to 6 hours per week outside of class. Prerequisite: Computer Science 311 or 340. Lectures: 1-1/2 hours per week, given over two terms.
- 451A **ORGANIZATION OF DATA.** Half Course. B. Desai
A basic theoretical course in data handling. Linear lists, linked lists, orthogonal lists, trees and rings. Basic algorithms for searching, sorting, posting and updating files. The choice of proper file structure and medium for various applications. Control of job flow by the operating system in a multi-programming computer. Directories, inverted lists, and Boolean searches for large information files. Prerequisite: Computer Science 241 or 313. Lectures: 3 hours per week, first term. Text: *Date Structures & Management*, I. Flores
- 533A **COMPUTER OPERATING SYSTEMS.** Half Course.
Review of computer system organization and control. Input-output routines. Job control programs for batch processing: translating, loading, linking, execution and accounting. File control systems for parallel input-output processing. The management of interrupts, buffers, spooling and memory protection. Operating systems for multiprogramming computers. Time-sharing systems, and interactive processors with real-time application. Prerequisite: Computer Science 451. Lectures: 3 hours per week, first term.
- 551A **THEORY OF AUTOMATA.** Half Course. D. West
Theoretical description of computing machines. Finite state automata and sequential machines. The equivalence of states and machines; congruence; reduced machines; analysis and synthesis of automata. Turing and other machines. Recursion and decidability. Prerequisite: Computer Science 451. Lectures: 3 hours per week, first term. Text: *Computation, Finite and Infinite Machines*, M. Minsky
- 561Y **COMPUTER SCIENCE.** Half Course (over two terms).
The purpose of this course is to present a series of seminars of current interest by faculty, student and industry and work on project in conjunction with a faculty member. Prerequisite: Consent of Faculty Member. Seminar: 10 hours. Project: 25 hours.

Geology

Chairman: E. H. CHOWN

Courses leading to an Honours B.Sc. in Geology

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Geology 311Y	Geology 401B	Geology 502Z
Geology 313A	Geology 412Z	Geology 512Z
Geology 315B	Geology 431B	Geology 521A
Geology 321A	Geology 441A	Geology 523B
Geology 331B	Geology 443A	Geology 552Z
Geology 333B	Geology 445B	Geology Elective
Chemistry 342A	Geology Elective (1/2)	Elective
Chemistry 344B	Chemistry 336Z	
Cognate Science Elective	Elective	
Elective		
Total 6 courses	Total 6 courses	Total 6 courses

Note: Since Geology 333 and 401 are field courses taken after final exams, Honours students may wish to add a half course cognate Science elective in either University I or II.

Courses leading to a B.Sc. with a Major in Geology.

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Geology 311Y	Geology 401B	Geology 512Z
Geology 313A	Geology 412Z	Geology 521A
Geology 315B	Geology 443A	Geology 523B
Geology 321A	Geology 445B	Geology Elective
Geology 331B	Geology Elective (1/2)	Cognate Science Elective
Geology 333B	Cognate Science Elective	Elective
Chemistry 342A	Cognate Science Elective	
Chemistry 344B	Elective	
Cognate Science Elective (1/2)		
Chemistry 231		
Elective		
Total 6 courses	Total 6 courses	Total 5 courses

Courses leading to a B.Sc. in Geology.

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Geology 311Y	Geology 412Z	Geology 521A
Geology 313A	Geology 443A	Geology Elective
Geology 321A	Geology 445B	Geology Elective (1/2)
Geology Elective (1/2)	Cognate Elective	Cognate Elective
Cognate Elective	Cognate Elective	Cognate Elective
Cognate Elective	Elective	Elective
Elective		
Total 5 courses	Total 5 courses	Total 5 courses

Cognate Science electives for Major and Honours Students may be taken in any of the related Sciences, Chemistry, Physics, Mathematics, Biology, Computer Science and Engineering.

Students in the General Programme may choose from a wider selection.

All elective courses must be approved by the Department.

Students planning to continue in Geology are normally advised to take Geology 201, or equivalent, in Collegial II. Students lacking this course will be required to take it with their University programme and will not receive credit for it at the University level.

Joint major programmes are offered in conjunction with all Science Departments.

Field Trips and Field Schools

Lectures and laboratory cannot successfully substitute for actual observation of geology in the field. Therefore, for all students, half or full day field trips to areas of geological interest are a normal adjunct to several courses. For students in the Honours and Major programmes, geological and geophysical field schools are conducted by staff members in the two weeks following the completion of examinations in the spring. Students following the General Programme are not required to take these field schools, but if suitably qualified, may be granted permission to do so by the department.

Summer Employment

It is strongly recommended that prior to graduation at least one summer be spent in some phase of geological work. Although the Department of Geology cannot guarantee summer employment, its students can normally expect to be engaged in suitable work, during the summer months, with government agencies or private companies.

201 A/B PHYSICAL GEOLOGY. Half Course. E. H. Chown, D. J. McDougall
Basic concepts, major features of the earth, igneous and earthquake activity, erosion and sedimentation, stream activity, and the development of various land forms, faulting and folding, glaciation, the earth's origin. Laboratory studies include investigation of rock and mineral specimens, interpretation of topographic and geological maps and aerial photographs, a field excursion to local areas. Lectures: 3 hours per week, first or second term. Lab: 2 hours per week, first or second term. Text: *Introduction to Geology*, Read & Watson, Vol. I. (MacMillan).

311Y MINERALOGY. Half Course. J. T. Jenkins
Physical and chemical properties of minerals, elements of crystal chemistry, mineral classification, silicate structure and a description of important silicate mineral groups are topics covered in lectures. In the lab, the composition, diagnostic properties and geological environments of some 150 minerals (non silicates and silicates) are emphasized, and physical and simple chemical tests are applied to the identification of these minerals. Lectures: 1-1/2 hours per week for two terms. Lab: 1-1/2 hours per week for two terms. Text: Hurlbut, *Dana's Manual of Mineralogy*, 18th Ed. (Wiley).

313A MORPHOLOGICAL CRYSTALLOGRAPHY. Half Course. J. T. Jenkins
Point and translational symmetry, the space-lattice, Miller Indices, Bravais Lattices Hermann-Mauguin notation, and description of the morphology of the forms of some of the mineralogically important point groups are lecture topics. The use of the powder diffractometer in identifying minerals is briefly examined and the identification of crystal forms and their representation in stereographic projection is stressed in labs. Lectures: 3 hours per week, first term. Lab: 3 hours per week, first term. Text: Hurlbut, *Dana's Manual of Mineralogy*, 18th Ed. (Wiley).

315B OPTICAL CRYSTALLOGRAPHY. Half Course. J. T. Jenkins
Lectures deal with the theoretical background necessary for the use of the petrographic microscope. In the laboratory, oil immersion techniques for the determination of isotropic and anisotropic minerals in powder form are studied. If time permits, an introduction to the use of the four-axis Universal Stage is given. Prerequisite: Geology 313. Lectures: 3 hours per week, second term. Lab: 3 hours per week, second term. Text: Wahlstrom, *Optical Crystallography*, 3rd Ed., (Wiley); U.S.G.S. Bull 848, *The Microscopic Determination of the Nonopaque Minerals*, 2nd Ed.

321A INVERTEBRATE PALEONTOLOGY. Half Course. K. K. Mukherji
A systematic survey of major invertebrate fossil groups with chief emphasis on morphology, classification, and geologic occurrence. Study of principles of evolutionary concepts and biostratigraphic zonation. Some selected discussion on paleoecology. Prerequisite: Geology 201. Lectures: 3 hours per week, first term. Lab: 3 hours per week, first term. Text: *Invertebrate Fossils*, Moore, Lalicker and Fischer (McGraw-Hill) N.Y.

331B APPLIED GEOPHYSICS. Half Course. K. K. Mukherji
An introduction to geophysical methods of prospecting and of investigating sub-surface structures. The theories, uses and limitations of various magnetic, electrical, gravitational and seismic methods are explained and compared. The practical operation of the instruments is reviewed and actual field results are analysed. Prerequisite: Geology 201. Lectures: 3 hours per week, second term. Lab: 3 hours per week, second term. Text: Dobrin, *Introduction to Geophysical Prospecting*. (McGraw-Hill).

333B FIELD GEOPHYSICS. Half Course. K. K. Mukherji
Field work involving small scale seismic, magnetic, gravimetric and electrical surveys. Students will be required to pay for room and board for a ten day period. Prerequisite: Geology 331. Field Work: 2 weeks in May at the Loyola Geophysics Field School.

401B FIELD GEOLOGY. Half Course. J. T. Jenkins
Surface and underground field mapping methods. Preparation of geological maps, sections and reports from field notes, diagrams and air photos. Special field trips to examine specific geologic problems. Students will be required to pay for room and board for a ten day period. Prerequisite: Geology 442, 412. Field Work: 2 weeks in May at the Loyola Geology Field School.

411 INTRODUCTION TO X-RAY CRYSTALLOGRAPHY. Half Course.
(Not offered in 1973-74). The nature of X-rays, diffraction, the reciprocal lattice, powder diffractometer, powder cameras, single crystal methods. Laboratory work will stress the techniques of powder diffractometry and Precession photography. Prerequisite: Geology 313. Lectures: 2 hours per week, one term. Lab: 4 hours per week, one term. References: Bloss: *Crystallography and Crystal Chemistry*, (Holt, Rinehart, Winston), 1971. Sands: *Introduction to Crystallography*, (Benjamin Inc), 1969. Azaroff: *Elements of X-ray Crystallography*, (McGraw-Hill), 1968.

412Z ELEMENTARY PETROLOGY. Full Course. E. H. Chown, J. T. Jenkins, K. K. Mukherji
The identification and description of hand specimens of sedimentary, igneous and metamorphic rocks. Methods of classifying rocks. Prerequisite: Geology 201 and 311. Lectures: 3 hours per week for two terms. Lab: 3 hours per week for two terms.

413B SEDIMENTARY PETROLOGY. Half Course. E. H. Chown
Given alternate years. The occurrence and formation of sedimentary rocks. Laboratory includes a brief survey of techniques applied to unconsolidated sediments, but particular emphasis is placed on the microscopic examination of sedimentary rocks. Prerequisite: Geology 412, 315 (may be taken concurrently). Lectures: 2 hours per week, second term. Lab: 4 hours per week, second term. Text: Blatt, Middleton, Murray, *Origin of Sedimentary Rocks*. (Prentice Hall).

431B GEOCHEMISTRY. Half Course. D. J. McDougall
An introduction to geochemistry including the chemical make-up of the solar system and the geochemistry of the atmosphere, hydrosphere, crust, mantle and core. The chemistry of igneous, sedimentary and metamorphic rocks, with some emphasis on the trace elements which characterize each. Anomalous trace element concentrations in rocks, soils and water and the application to mineral exploration geochemistry. In the laboratory the material discussed in the lectures is illustrated by geochemical calculations, trace element distribution maps and methods of geochemical analysis. Prerequisite: Geology 201. Lectures: 2 hours per week, second term. Lab: 4 hours per week, second term. Text: Mason: *Principles of Geochemistry*, 3rd Ed. (Wiley) and selected references.

441A GEOMORPHOLOGY. Half Course. D. J. McDougall
Erosion; soil development; Fluvial processes and mass wasting; influence of climate, rock type and structure on the development of land forms; coastal features; aeolian processes; glacial and periglacial activity. Laboratory work emphasizes interpretation of aerial photographs and topographic maps and a field excursion to local areas. Prerequisite: Geology 201. Lectures: 2 hours per week, first term. Lab: 4 hours per week, first term. Text: Thornbury: *Principles of Geomorphology*, 2nd Ed., (Wiley); Ray: *Aerial Photographs in Geologic Interpretation and Mapping*. (U.S.G.S.)

443A STRUCTURAL GEOLOGY. Half Course. E. H. Chown
The recognition and origin of geologic structures. Primary structures, faults, folds and joints, principles of rock deformation. Laboratory includes a survey of methods of structural interpretation, structural experiments and field trips. Prerequisite: Geology 201. Lectures: 3 hours per week, first term. Lab: 3 hours per week, first term. Text: Hills: *Elements of Structural Geology*, 2nd Ed. (Methuen). Laboratory: Ragan: *Structural Geology* (Wiley). Blackader: *Guide for the Preparation of Geological Maps and Reports* (Department of Energy Mines and Resources)

445B TECTONICS. Half Course. E. H. Chown
Relation of deformation to intrusion and sedimentation. Multiple deformation, structural petrology, Theories of Geosynclines and Plate Tectonics. Laboratory: Consists of tectonic analysis using geologic maps. Prerequisite: Geology 443. Lectures: 3 hours per week, second term. Lab: 3 hours per week, second term. Texts: Hills: *Elements of Structural Geology*, 2nd Ed. (Methuen).

501 A/B READING COURSE. Half Course Staff
A reading and discussion course for Honours and interested Major students. The course involves reading in two disciplines of geology chosen by the student, and the discussion with assigned faculty members. Six hours per week, first or second term.

502Z UNDERGRADUATE THESIS. Full Course. Staff
Honours students in their final year are expected to show competence in isolating and examining a geological problem using techniques available within the department, working in conjunction with assigned faculty advisers. Course evaluation will be based on the student's performance in the investigation and on the written report. Major students may also take the course at the discretion of the Department. Lectures: Six hours per week, for two terms.

505B PRECAMBRIAN GEOLOGY. Half Course.
(To be offered 1974/75). Evolution of the earth in the Precambrian. Problems in Precambrian correlation, paleoclimates and structural history. Emphasis on Canadian and North American Precambrian areas. One term paper to be prepared. Prerequisite: Geology 412, 443, 445. (may be taken concurrently). Lectures: 3 hours per week, second term. Periodic Seminars.

512Z IGNEOUS AND METAMORPHIC PETROLOGY. Full Course. J. T. Jenkins
Presentation and interpretation of phase relations mineralogy, fabric classifications and petrogenesis of the igneous rocks. The scope of metamorphism, the zone, grade and facies concepts of metamorphism. ACF and A'KF diagrams in the laboratory, megascopic and microscopic techniques are used in the examination of rocks representative of the more common igneous and metamorphic varieties. Prerequisite: Geology 311, 313, 315, 412. Lectures: 3 hours per week for two terms. Labs: 3 hours per week for two terms. Texts: Huang: *Petrology* (McGraw-Hill); Moorhouse: *The Study of Rocks in Thin Section* (Harper). References: Deer, Howie and Zussman: *An Introduction to the Rock Forming Minerals* (Longmans); Spry: *Metamorphic Textures* (Pergamon); Winkler: *Petrogenesis of Metamorphic Rocks*, 2nd Ed. (Springer-Verlag).

521A STRATIGRAPHY. Half Course. K. K. Mukherji
Elementary principles of stratigraphy, correlation and time concept. A brief survey of major events in the Geologic history of the earth and its inhabitants with special reference to North America. Emphasis will be given to the study of some type sections, paleogeography and organic aspects. Prerequisite: Geology 201. Lectures: 3 hours per week, first term. Lab: 3 hours per week, first term. Text: Kummel: *History of the Earth*, 2nd Ed. (Freeman).

523B GEOLOGY OF CANADA. Half Course. K. K. Mukherji
Geologic study of the major geomorphic subdivision of Canada with special emphasis on stratigraphy, correlation, paleogeography, sedimentation and tectonics. Reading assignments and colloquium are used to probe into specific problems. Prerequisite: Geology 201, (521 or 321). Lectures: 3 hours per week, second term. Colloquium: 1-3 hours per week, second term. Text: *Geology and Economic Minerals of Canada*, 5th Ed., Econ. Geol. Series No. 1 of the Geological Survey of Canada.

531A MINERAL PHYSICS. Half Course.
(To be offered in 1974/75). Selected aspects of the relationship of solid state characteristics of minerals to their conditions of formation and subsequent history. In the laboratory details of crystal structure are considered and readily developed changes in solid-state conditions in minerals and metals are used to amplify the lecture material. Prerequisite: Geology 311, 313, 412, 431. Lectures: 2 hours per week, first term. Lab: 4 hours per week, first term. Texts: Deer, Howie and Zussman: *An Introduction to the Rock Forming Minerals* (Longmans); Spry: *Metamorphic Textures*. (Pergamon). References: Van Vlack: *Elements of*

Materials Science, 2nd Ed., (Addison-Wesley); and/or Wulf et al: *The Structure and Properties of Materials*, (Wiley).

- 541B **ENGINEERING GEOLOGY.** D. J. McDougall
Engineering properties of rocks and soils. Ground water. Frost action and permanently frozen ground. Stream flow, erosion and deposition. Application of geology to engineering problems — tunnels, slope control foundations, roads and airports, dams and reservoirs, river and shoreline control. Elements of rock and soil mechanics. The laboratory will be utilized in part for experimental determination of some of the engineering properties of soils and rocks and in part for discussion of engineering geology case histories. Prerequisite: Geology 201, (Geology 443 and/or 551 are recommended). Lectures: 2 hours per week, second term. Lab: 4 hours per week, second term.
- 551A **ECONOMIC GEOLOGY.** Half Course. D. J. McDougall
The origin, classification and evaluation of ore and petroleum deposits. Laboratory includes problems in ore evaluation and petroleum geology, and the examination of suites from representative mining camps. Prerequisite: Geology 201, 311. Lectures: 2 hours per week, first term. Text: Skinner: *Earth Resources* (Prentice Hall).
- 552Z **ORE DEPOSITS.** Full Course. E. H. Chown, D. McDougall
The origins, type of occurrence and classification of metallic mineral and non-metallic mineral deposits. The application of all fields of geology towards a specific problem. Laboratory includes exercises on property and ore evaluation, an introduction to incident light microscopy and a series of examinations and a term project on suites from various ore deposits. Prerequisite: Geology 315, 442, 412. Lectures: 2 hours per week for two terms. Lab: 4 hours per week for two terms. Text: Park and MacDiarmid: *Ore Deposits*, 2nd Ed. (Freeman).

Mathematics

Chairman: J. SORIC

Courses leading to an Honours B.Sc. in Mathematics.

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Mathematics 321A/B	Mathematics 340Z	Mathematics 535A
or	or	Mathematics 551B
Mathematics Elective(1/2)	Mathematics 402Z	Mathematics 567A
Mathematics 323B	Mathematics 426Z	Mathematics Elective(1/2)
Mathematics 326Z	Mathematics 436Z	Mathematics Elective
Mathematics 334Z	Mathematics 451B	Mathematics Elective
Mathematics 353A	Mathematics Elective(1/2)	Elective
Mathematics Elective(1/2)	Cognate Elective	
Cognate Elective	Elective	
Elective		

Courses leading to a B.Sc. with a Major in Mathematics

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Mathematics 321A/B	Mathematics 326Z	Mathematics 436Z
or	Mathematics 353A	Mathematics Elective
Mathematics Elective(1/2)	Mathematics 402Z	Mathematics Elective
Mathematics 323B	Mathematics 451B	Elective
Mathematics 334Z	Cognate Elective	Elective
Mathematics 340Z	Elective	
Cognate Elective		
Elective		

Courses leading to a B.Sc. in Mathematics. (General)

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Mathematics 334Z	Mathematics 321A/B	Mathematics 326Z
Mathematics 340Z	or	Mathematics 353A
Cognate Elective	Mathematics Elective(1/2)	Mathematics Elective(1/2)
Elective	Mathematics 323B	Mathematics 436Z
Elective	Mathematics 402Z	Elective
	Elective	Elective
	Elective	
	Elective	

NOTES:

- 1— *Cognate Electives* are to be chosen after consulting the Department Chairman. The course would normally be one in which Mathematics is applied, e.g. physics, computer science, etc.
- 2— Students who intend to follow a Mathematics Program in University are recommended to take Mathematics 131A, 131B, 232 (or their equivalent) at the collegial level.
- 3— A student wishing to major in Mathematics but not meeting these requirements should consult with the Department Chairman.
- 4— Students who have taken Mathematics 321 (introductory linear algebra) or its equivalent at the collegial level, have a Mathematics elective (half course) in its place. Students without a collegial half course in linear algebra take Mathematics 321 in University 1.

- 5— By a careful choice of electives students can select whether the emphasis of the program will be in the area of pure or applied Mathematics.

Honours and Majors Math.

- 6— Students entering University III in September '73 will take the same required courses as those described in the '72-'73 Calendar. However, their electives can be chosen from the new and old elective course offerings. General Students take Math 353A and Math Elective (1/2) instead of Math 434Z.
- 7— Students entering University II Honours Math in September '73 must take Math 353A (Differential Equations (1/2)) instead of Math Electives (1/2).

- 300Z IDEAS IN MATHEMATICS. Full Course. R. Smith
The course endeavours to reveal the extent and power of mathematics and to give some insight into its historical development. The topics chosen will be presented in a way that requires a minimal mathematics background. This course has no formal prerequisites and does not serve as a prerequisite for any other course in mathematics. Students should consult with the professor before registering for this course. Lectures: 3 hours per week for two terms.
- 301 A/B ELEMENTARY STATISTICS. Half Course D. Kachroo
Empirical frequency distributions and descriptive measures; Elementary Probability; Populations, samples and theoretical distributions; Sampling distributions; Estimation of confidence intervals; Tests of hypotheses; two sample techniques; tests for goodness of fit; Regression and correlation; Analysis of variance. Lectures: 3 hours per week, first or second term. Text: *Introduction to Probability and Statistics*, (3rd Edition) by William Mendenhall.
- 303A PROBABILITY FOR ENGINEERS. Half Course. R. C. Moore
Probability Theory; special distribution; binomial, Poisson, Normal, Gamma and Beta distributions. Sampling distributions. Lectures: 3 hours per week, first term.
- 312Z DIFFERENTIAL EQUATIONS. Full Course. M. Faierman
Special methods for first order ordinary differential equations. Application of first order equations. Linear differential equations with constant coefficients. Applications of second order linear differential equations. Power series solutions. Systems of linear equations. The Laplace Transform. Non-linear differential equations. Boundary value problems. Prerequisite: Mathematics 114Z. Lectures: 2 hours per week for two terms.
- 315A ENGINEERING MATHEMATICS. Half Course. T. Srivastava
Fourier series. Laplace Transform. Gamma, Beta, Legendre and Bessel functions. Jacobians. Transformations in multiple integrals. Introduction to partial differential equations. Prerequisite: Mathematics 114Z. Lectures: 3 hours per week, first term.
- 317B MATHEMATICS FOR ENGINEERS & PHYSICISTS. Half Course. T. Srivastava
Vector analysis. Line and surface integrals. Divergence and Stokes theorems. Complex analysis; analytic functions. Cauchy theorem. Cauchy's integral formula. Taylor and Laurent expansions. Cauchy Residue theorem. Contour integration. Simple transformations.

Prerequisite: Mathematics 114Z or 232. Lectures: 3 hours per week, second term.

- 321 A/B INTRODUCTION TO LINEAR ALGEBRA. Half Course. M. V. Bobetic, D. Kachroo
Systems of equations. Vector spaces. Matrices. Linear transformations, Determinants. Lectures: 3 hours per week, first or second term. Text: O'Nan, *Linear Algebra*.
- 323B LINEAR ALGEBRA. Half Course. E. O'Connor, S.J.
Vector spaces, bases, dimension. Linear mappings. Matrices and linear operators. Eigenvalues and eigenvectors. Canonical forms. Inner product spaces. Prerequisite: Mathematics 321A or 321B, or its equivalent. Lectures: 3 hours per week, second term. Text: O'Nan, *Linear Algebra*.
- 326Z ALGEBRA I. Full Course. H. Kim
Theory of groups, subgroups, 1st sylow theorem and normal subgroups. Commutator subgroups. Permutation groups, generated subgroups. Quotient groups and Lagrange's theorem. Homomorphisms, p -groups and the class formula. Elementary properties of rings, integral domains and fields. Ideals and Quotient rings. Examples of non-commutative rings. Ring homomorphisms. Polynomial rings and factorization. Field of quotients and other selected topics. Lectures: 3 hours per week for two terms.
- 332Z ADVANCED CALCULUS. Full Course. (for Chemistry students) M. Faierman
Differential equations; limits and continuity; multiple integrals; Green's, Stoke's, Gauss theorems; series; improper integrals and Laplace transform. Prerequisite: Mathematics 232Z. Lectures: 3 hours per week for two terms.
- 334Z ADVANCED CALCULUS. Full Course. M. V. Bobetic, T. N. Srivastava
Functions of several variables, limits, continuity, partial derivatives, maxima and minima, extremal problems with constraints, differentiability, Taylor's series, double and triple integrals, curves and surfaces, line and surface integrals, Green's theorem and Stoke's theorem. Prerequisite: Mathematics 232Z. Lectures: 3 hours per week for two terms. Text: *Advanced Calculus* by A. Taylor (Ginn).
- 336Z CALCULUS. Full Course. (for non-science students)
Limits of functions, differentiation and integration of polynomials with applications; second derivative and differentiation of algebraic, exponential and logarithmic functions; curvature; definite integral. Differentiation and integration of trigonometric functions; methods of integration; improper integrals; application of the definite integral; partial derivatives; multiple integrals, expansion of functions. Prerequisite: Mathematics 101 or its equivalent. Lectures: 3 hours per week for two terms. Text: *Analytic Geometry and the Calculus* by Goodman (MacMillan)
- 340Z NUMERICAL METHODS. Full Course. R. Smith
The course is designed to acquaint the student with standard numerical methods and their mathematical foundations. Evaluation of polynomials and their derivatives. Linear approximations. Zeros of functions. Basic sets of polynomials. Polynomial approximations. Numerical differentiation and integration. Gaussian quadrature. Method of undetermined coefficients. Ordinary differential equations. Systems of linear algebraic equations. Matrix inversion. Prerequisite: Mathematics 232Z. Lectures: 3 hours per week for two terms.

- 353A ORDINARY DIFFERENTIAL EQUATIONS I. Half Course. A. Keviczky
First order differential equations. Linear differential equations with constant and variable coefficients. Sturm-Liouville problems. Green's function. Prerequisite: Mathematics 232Z. Lectures: 3 hours per week, first term. Text: *Elementary Differential Equations* by Kreider, Kuller & Ostberg (Addison & Wesley).
- 371A INTRODUCTION TO LOGIC. Half Course.
Logic and Language. Propositional calculus. Validity and invalidity. Formal proofs. Propositional functions and quantifiers. Predicate calculus. Metamathematics. Lectures: 3 hours per week, first term.
- 373B SET THEORY. Half Course.
Elementary properties of sets, relations and functions. Equivalence relations. Axiom of choice and equivalent conditions. Ordinal and cardinal numbers. Lectures: 3 hours per week, second term. Text: *Naive Set Theory* by Halmos.
- 375B INTRODUCTION TO COMBINATORIAL MATHEMATICS. Half Course.
Elementary Graph Theory. Permutations and combinations. Principle of exclusion and inclusion and its applications; various combinatorial problems, recurrence relations. Lectures: 3 hours per week, second term.
- 377B INTRODUCTION TO GAME THEORY. Half Course.
(Not offered in 1973/74). Matrix games. Strategies. Optimum strategies and the value of a game. Strictly determined games. Non-strictly determined games and linear programming. Applications. Further material according to interest of instructor and students. Lectures: 3 hours per week, second term.
- 402Z STATISTICS I. Full Course. R. C. Moore
Probability and statistics; frequency distributions, probability, binomial normal and Poisson Laws, sampling theory. Curve fitting, distribution of chi-squares, F and T; Testing of hypothesis, Quality control, regression theory; analysis of variance, Introduction to experimental design. Prerequisite: Mathematics 232Z. Lectures: 3 hours per week for two terms. Text: *Mathematical Statistics* by Freund (Prentice Hall).
- 426Z ALGEBRA II. Full Course. H. Kim
Advanced topics in group theory including Sylow theorems. Fundamental theorem of finitely generated abelian groups, composition series. Galois' theorem for permutation groups. Introduction to field theory; normal and separable extensions, Galois theory and unsolvability of the Quintic. Prerequisite: Mathematics 326Z. Lectures: 3 hours per week for two terms. Text: *First Course in Abstract Algebra* by Fraleigh (Addison & Wesley).
- 436Z REAL ANALYSIS. Full Course E. O'Connor, S.J.
The Real number system, Dedekind cuts, metric spaces, sequences, series convergence tests, limits of functions, continuity, the Bolzano-Weierstrass theorem, derivatives, Taylor's Theorem, functions of bounded variation, Riemann-Stieltjes integral, sequences and series of functions, uniform convergence. Prerequisite: Mathematics 334Z. Lectures: 3 hours per week for two terms. Text: *Principles of Mathematical Analysis* by Rudin.
- 451B COMPLEX ANALYSIS I. Half Course. M. Faierman
Roots of a complex number. Functions, limits and continuity. Branch points; analytic functions; Cauchy-Riemann equations; singular points; Complex integration; Green's formula, Liouville theorem. Taylor's and

Laurent's theorem. Theory of Residues. Evaluation of integrals. Selected topics. Prerequisite: Mathematics 334Z. Lectures: 3 hours per week, second term.

- 471A PROJECTIVE GEOMETRY. Half Course. M. Lorimer
Basic definitions and results; collineations; affine planes; perspectivities; Desargues and Pappus postulates and Hessenburg's theorem. Incidence Matrices of finite projective planes and orthogonal Latin squares. Coordinates in projective planes; examples of non-Desarguesian projective planes. Prerequisite: Mathematics 326Z. Lectures: 3 hours per week, first term.
- 473B ORDINARY DIFFERENTIAL EQUATIONS II. Half Course. (not offered in 1973-74). A. Keviczky
Linear differential equations with analytic coefficients. Frobenius method for linear differential equations at a regular singular point; Laplace transforms. Existence and uniqueness theorems. Prerequisite: Mathematics 353A. Lectures: 3 hours per week, second term. Text: *Elementary Differential Equations* by Kreider, Kuller & Ostberg (Addison & Wesley).
- 502Z STATISTICS II. Full Course. R. C. Moore
Analysis of variance, correlation, regression. Introduction to experimental design. Multivariate normal distribution. Linear Models. Prerequisite: Mathematics 402Z. Lectures: 3 hours per week for two terms.
- 526Z ALGEBRA III. Full Course. H. Kim
Rings and Modules, structure of groups, lattices, categories and functors and multi-linear algebra. Prerequisite: Mathematics 426Z. Lectures: 3 hours per week for two terms. Text: *Algebra* by MacLane and Birkhoff (MacMillan).
- 536Z REAL AND COMPLEX ANALYSIS. Full Course. E. O'Connor, S.J.
(Offered in 1973/74 only). The Lebesgue integral and the classical problems it lays to rest. An exploration of more general theories of measure and integration in view of their mathematical clarifications or their applications. An introduction to the theory of functions of a complex variable through its principle classical theorems with some of their recent modifications. Prerequisite: Mathematics 436Z. Lectures: 3 hours per week for two terms.
- 535A MEASURE THEORY AND INTEGRATION. Half Course.
(Not offered in 1973/74). The Lebesgue integral and the classical problems it lays to rest. An exploration of more general theories of measure and integration in view of their mathematical clarifications or their applications. Prerequisite: Mathematics 436Z. Lectures: 3 hours per week, first term.
- 540Z NUMERICAL ANALYSIS. Full Course. R. Smith
Polynomial approximation. Interpolation; numerical differentiation quadrature and summation; numerical solution of ordinary differential equations. Functional approximations. Least square techniques. Solutions of non-linear equations. Solutions of simultaneous linear equations, calculation of Eigenvalues and Eigenvectors of matrices. Prerequisite: Mathematics 340Z or special permission of the professor. Lectures: 3 hours per week for two terms. Text: *A First Course in Numerical Analysis* by A. Ralston (McGraw-Hill).
- 551B COMPLEX ANALYSIS II. Half Course.
(Not offered in 1973/74). Analytic continuation. Maximum modulus

theorem and its application. Argument principle. Rouché's theorem. Conformal mapping. Entire functions. Prerequisite: Mathematics 451B.

- 560Z TOPOLOGY. Full Course. J. Soric
(Offered in 1973/74 only). Metric spaces, topological spaces, products of spaces, separation axioms, connectedness, approximation, Banach spaces, Hilbert spaces. Prerequisite: Mathematics 436Z or permission of the instructor. Lectures: 3 hours per week for two terms. Text: *Introduction to Topology and Modern Analysis* (Simmons).
- 567A TOPOLOGY. Half Course.
(Not offered in 1973/74). Topological spaces, neighbourhoods, subspaces, continuous functions, compactness, connectedness, separation axioms, approximation. Prerequisite: Mathematics 436Z. Text: *Introduction to Topology & Modern Analysis* by Simmons (McGraw-Hill).
- 571B ALGEBRAIC TOPOLOGY. Half Course.
(Not offered in 1973/74). Homotopy theory. Fundamental groups, classification and polygon representation of the topological surfaces. Orientability. Handles and cross caps. Triangulation, simplexes, chains and normal forms. Homology theory. Prerequisite: Mathematics 326Z, 567A. Lectures: 3 hours per week, second term.
- 575 SENIOR THESIS. Half Course.
A/B Under special circumstances, approval will be given to undertake a research problem requiring independent work. The results will be directed and evaluated by a member of the department. Prerequisite: Approval of the Department Chairman.
- 577B FUNCTIONAL ANALYSIS. Half Course.
(not offered in 1973/74). A short review of some of the algebraic concepts, Banach space; definitions and examples, continuous linear transformations. Hahn-Banach theorem. The natural embedding of N into N^{**} . Hilbert spaces: definitions and examples. Orthonormal sets the conjugate space H^* . The adjoint of an operator. Self adjoint operators. Normal and unitary operators. Projections. Finite dimensional spectral theory. Prerequisite: Mathematics 567A.
- 579B CALCULUS OF VARIATIONS. Half Course. M. Bobetic
Euler-Lagrange equation. Legendre and Jacobi conditions, the E-function; Hilbert's invariant integral. Hamilton-Jacobi theory. Introduction to optimal control problems. Introduction to direct methods and partial differential equations. Prerequisite: Mathematics 334Z. Lectures: 3 hours per week, second term.
- 581A NUMBER THEORY. Half Course.
(Not offered in 1973/74). Arithmetical functions $d(n)$, $\sigma(n)$, $\phi(n)$ and their formulas. Mersenne numbers, perfect numbers. Congruences; Fermat theorem. Euler-Fermat theorem; Wilson's theorem. Divisibility properties of products of consecutive integers. Linear and quadratic congruences. Law of quadratic reciprocity. Mobius functions. Mobius inversion formula. Gauss theorem on $\phi(n)$. Gauss theorem on primitive roots. Text: *Topics in Number Theory* by LeVeque. Vol. 1.
- 592Z MECHANICS. (Also listed as Physics 414Z). Full Course.
Review of Vector Calculus. Kinematics of Particle Motion. Moving Coordinate Systems. One Dimensional Motion. Introduction to Lagrange's and Hamilton's Equations of Motion. Conservative Motion with emphasis on central forces. Systems of Particles Rigid Bodies. Emphasis will be on

illustrating the method of attacking physical problems and the mathematical tools used in solving them. Prerequisite: 1 full Physics course and 2 full courses in Calculus. Lectures: 3 hours per week for two terms. Text: *Introduction to the Principles of Mechanics* by Hauser (Addison Wesley).

- 594Z METHODS OF MATHEMATICAL PHYSICS II. (Also listed as Physics 420Z). Full Course.
General concepts of analysis. Partial differential equations of Physics. Function spaces and orthogonal sets. Sturm-Liouville problem. Fourier series and Fourier Integral. Special functions: Legendre, Bessel. Prerequisite: Linear Algebra, Advanced Calculus, Differential Equations. Lectures: 3 hours per week for two terms. Text: *Fourier Series and Boundary Value Problems* by Churchill (McGraw).

Physics

Chairman: C. E. EAPPEN

The Department offers three B.Sc. Physics Programmes.

Honours Programme: For students who wish to prepare themselves for post-graduate studies in Physics.

Major Programme: Two options.

Major I — For students with a strong interest in physics and would like to keep open the possibility of going on later towards a higher degree.

Major II — For students with a basic interest in physics but who wish to broaden their education into allied fields.

Honours Programme in Physics

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Physics 301A	Physics 400Z or 402Z	Physics 512Z
Physics 308Z or P.300Z	Physics 404Z	Physics 503A
Physics 311B	Physics 408Z	Physics 505B
Physics 320Z or 324Z	Physics 411A	Physics 514Z
Mathematics 334Z	Physics 413B	Physics 511A
Mathematics 353A	Physics 420Z	Elective
Mathematics 317B	Elective	Elective

Major Programme in Physics

Major I

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Physics 301A	Physics 311B	Physics 404Z
Physics 308Z or 300Z	Physics 400Z or 402Z	Physics 411A
Physics 320Z or 324Z	Physics 408Z	
Mathematics 334Z	Physics 420Z	Physics 503A
Mathematics 353A	Physics 511A	Physics 505B
Mathematics 317B	Elective	Physics 514Z
Elective		Elective

Major II

UNIVERSITY I	UNIVERSITY II	UNIVERSITY III
Physics 301A	Physics 300Z or 308Z	Physics 408Z
Computer Science	Physics 402Z or 400Z	Physics 414Z
Mathematics 301 or 303A	Physics 407B	Three Electives
Physics 324Z or 320Z or		
Mathematics 332Z	Three Electives	
Two Electives		

Note: Joint Majors with physics as a joint major component are possible. Interested students are asked to consult with the appropriate chairmen.

- 300Z **ELECTRICITY AND MAGNETISM.** Full Course. C. E. Eappen
This course treats the following topics: Coulomb's Law; Gauss's Law; Electric Potential; Capacitance; Polarization; Resistance and Current; DC circuit analysis; Insulator, conductor, and semi-conductor; Ammeters, voltmeters and associated instruments; Moving Charges, Magnetic fields, Magnetic Induction; Magnetization; Magnetic properties of matter;

Steady-state AC circuit analysis. Prerequisite: one full course in Physics and one full course in Calculus. Lectures: 3 hours per week for two terms. Lab: 3 hours per week for two terms. Text: *Fundamentals of Electricity and Magnetism*, by A. F. Kip.

- 301A **OPTICS.** Half Course. C. E. Eappen
Principles of Geometrical and Physical Optics, Interference. Diffraction, Polarization. Double Refraction. Prerequisite: One full course in Physics and one full course in Calculus. Lectures: 3 hours per week, first term. Lab: 3 hours per week, first term. Text: *Introduction to Geometrical and Physical Optics*, by Morgan (McGraw-Hill).
- 302Z **SPACE PHYSICS.** Full Course.
(Not offered in 1973/74). A highly descriptive course for University Science students in the Elements of Astronomy, Astro-Physics, Artificial Satellite Motion and Space Travel. The topics covered are: The Earth and its Motions; Celestial Mechanics; The Solar System; Elements of Atomic Physics; Radio Astronomy; The Sun, Other Stars, Galaxies and Nebulae; Artificial Satellite Motions; Communication Satellites; Rocket Motion; Space Travel; Apollo Missions and Their Findings; The Nature of our University. Prerequisite: Physics 101Z or equivalent. Lectures: 3 hours per week for two terms. Text: *Principles of Astronomy* by S. P. Wyatt (Allyn & Bacon).
- 308Z **ELECTRICITY AND MAGNETISM.** Full Course. C. E. Eappen
Coulomb's Law. Electric fields. Gauss's Law. Electric potential. Capacitance. Dielectric Theory and Behaviour. Direct currents. Moving charges and Magnetic fields. E. M. induction. Mutual and self-inductance. Magnetic properties of matter. Steady-state AC circuit analysis. Maxwell's equations and Electro-magnetic waves. Prerequisite: one full course in Physics and one full course in Calculus. Lectures: 3 hours per week for two terms. Lab: 3 hours per week for two terms. Text: *Fundamentals of Electricity and Magnetism*, by A. F. Kip.
- 311B **MECHANICS.** Half Course. T. A. Kovats
Basic concepts. Particle kinematics. Newton's Laws. Elasticity. Forces. Equilibrium. Virtual work. Stability of equilibrium. Particle motion on a line, on a plane, in a uniform force-field. Central orbits. Prerequisite: two full courses in Calculus, one-half course in differential equations, one and one-half courses in Physics. Lectures: 3 hours per week with weekly assignments, second term. Texts: *Mechanics* by W. Arthur and K. Fenster.
- 315A **THE MECHANICS OF VISUAL REPRESENTATION.** Half Course. S. Markiza
An introductory course combining laboratories and lectures illustrating the basic laws which govern the mechanism of image reproduction. Relevant topics concerning the interaction of light and materials are discussed and demonstrated. The students themselves perform experiments with light-sensitive materials, the Pin-Hole camera, image formation, lenses, light intensity, diaphragm openings, 3-colour composition of light and filters. This course is designed to complement "The Dynamics of Visual Representation" (Communication Arts 360) and parallels the Chemistry laboratory course 315A. It is presented to students in Communication Arts only. Lab: 3 hours per week, first term.
- 317B **THE PHYSICS OF PHOTO-REPRODUCTION.** Half Course. S. Markiza
A combined laboratory and lecture course presented to students in Communication Arts who have a basic knowledge of Physical Laws. Ideas introduced in the "Mechanics of Visual Representation" are further developed, covering topics such as the Latent Image, Mechanism of

Development, The Characteristic Curve, Sensitometry, Modulation of Exposure, Densitometry, ASA, DIN, Natural Lighting, Standard Association Institute Photographic Exposure Guide. This course is so designed that the student will gain an intelligent and efficient use of his equipment. Lab: 3 hours per week, second term.

320Z METHODS OF MATHEMATICAL PHYSICS I. Full Course. R. L. Kovacs
Vector Spaces. Matrices and Determinants. Linear Operators. Linear Coordinate Transformations. System of Simultaneous Linear Equations. Eigen Value Problem and Quadratics Forms. Introduction to Vector and Tensor Analysis, (if time permits). Prerequisite: one full course in Calculus and Physics 101Z. Lectures: 3 hours per week for two terms.

324Z ELEMNTNARY METHODS OF MATHEMATICAL PHYSICS. Full Course. R. L. Kovacs
General concepts of Mathematics. Functions of Many Variables. Elements of Linear Algebra (Vector Space, Basis, Matrices, Determinants, Linear Equations). Vector Analysis. Ordinary Differential Equations (Introduction). Partial Differential Equations of Physics (Introduction). Prerequisite: one full course in Calculus and Physics 101Z. Lectures: 3 hours per week for two terms. Text: *Calculus and Analytic Geometry*, by Goodman (MacMillan) *Vector and Tensor Analysis* by Hay.

345A INTRODUCTION TO CONSUMER AND COMMERCIAL ELECTRONICS. Half Course. J. Shin
A course primarily for people who wish to acquire a basic knowledge of some of today's consumer and commercial electronics, but leaving out most of the extensive theories. The course consists of a series of lectures, laboratory projects and demonstrations. Topics to be treated are: High Fidelity Amplifiers; Program Sources and Reproducurs; AM, FM, and SSB Transmission; Black and White and Colour Television Reception; Auto-Electronics; Electronic Control Systems; Applications of Linear and Digital Integrated Circuits. Lectures: 2 hours per week, first term. Lab: 3 hours per week, first term.

355B ELECTRONIC INSTRUMENTATION. Half Course.
(Not offered in 1973-74). This course is recommended for science students and others who might be working in scientific research laboratories. This course begins with basic electrical measurements and gradually leads to Amplifier Circuits of Vacuum Tubes and Transistors, Operational Amplifiers, Oscillators, Servo Systems as in Strip Chart Recorders, Feedback Control, Digital Circuits and other devices currently used in Research Laboratories. Prerequisite: Physics 101Z. Lectures: 3 hours per week, second term. Lab: 2 hours per week, second term. Text: *Electronics for Scientists* by Malmstadt, Enke and Toren.

400Z MODERN PHYSICS. Full Course. S. N. Bagchi
Consequences of Lorentz-Transformation in Physics. Quantum effects and wave-Particle dualism. Atoms and Old Quantum Theory. Schroedinger Equation. Operators. Eigen Functions. Eigen Values. Quantum-Mechanical States. Simple One-Dimensional Problems. Particle in a Box. Hydrogen Atom. Frank-Hertz Experiment. Atomic Structure. Periodic Table and Spectra. Zeeman Effect. Stern-Gerlach Experiment. Orbital Angular Momentum, Spin and Multiplicity. X-Ray Spectra. Interatomic Forces, Molecules and Molecular Spectra. Prerequisite: Physics 308Z or 300Z and Physics 320Z or 324Z. Lectures: 3 hours per week for two terms. Lab: 3 hours per week for two terms. Text: *Introduction to Modern Physics*, by Richtmeyer, Kennard and Cooper, (McGraw-Hill) (6th Ed.).

402Z MODERN PHYSICS. Full Course. C. E. Eappen
(Not offered in 1973/74). Special Relativity. Quantum Effects. Particle Aspects of Electromagnetic Radiation. Wave Aspects of Material Particles. Nuclear Atom and Bohr Theory. Elementary Quantum Mechanics of Atoms. X-Ray Spectra. Radioactivity. Nuclear Structure. Accelerators and Detectors. Nuclear Reactions. Prerequisite: Physics 300Z or 308Z and one full course in Calculus. Lectures: 3 hours per week for two terms. Lab: 3 hours per week for two terms. Text: *Elementary Modern Physics*, by Weidner and Sells.

403B MODERN PHYSICS. Half Course. M. S. Dubas
Special Relativity. Quantum Effects. Wave and Particle Aspects of Matter. Nuclear Atom and Bohr Theory. Elementary Quantum Mechanics of the Atom. X-Ray Spectra. Accelerators and Detectors. Topics in Nuclear Physics. Prerequisite: one full course in Calculus and one full course in Mechanics and one full course in Electricity and Magnetism. Lectures: 3 hours per week, second term. Text: *Elementary Modern Physics*, by Weidner and Sells, (Allyn and Bacon, latest Ed.).

404Z STATISTICAL AND THERMAL PHYSICS. Full Course. M. S. Dubas
Probability Distributions and Statistical Measures. Statistical Description of a System of Particles. Thermodynamic Laws, Basic Statistical Relations and Statistical Calculation of Thermodynamic Quantities. Macro Thermal Parameters and their Measurements with Simple Applications. Equilibrium between Phases and between Chemical Species. Quantum Statistics of Ideal Gases. Magnetism and Low Temperatures. Elementary Kinetic Theory of Transport Processes. Prerequisite: Physics 308Z or 300Z, Physics 311B and Advanced Calculus. Lectures: 3 hours per week for two terms. Text: *Fundamentals of Statistical and Thermal Physics*, by F. Reif, (McGraw-Hill).

407B THERMODYNAMICS. Half Course. C. S. Kalman
Temperature and Thermometry, Thermodynamic Systems. Equations of State. Work. First Law. Isothermal and Adiabatic Processes, Joule and Joule Thompson Experiments, Enthalpy, Change of Phase. Second Law, Entropy, Helmholtz and Gibbs Functions, Kinetic Theory, Maxwell Velocity Distribution. Transport Phenomena. Prerequisite: one full course in Physics and one full course in Calculus. Lectures: 3 hours per week, second term. Text: *Introduction to Thermodynamics; Kinetic Theory and Statistical Mechanics*, by Sears, (Addison-Wesley).

408Z ELECTRONICS. Full Course. J. Shin
This course treats the following topics: AC and DC Network Theory; Elementary Semi-Conductor Theory; P-N Junctions; DC Power Supplies and Filter Network Analysis; Junction and Field Effect Transistor Principles; Hybrid Models; Single and Multi-Stage Amplifiers; High Input Impedance Circuits; Differential Amplifiers; Frequency Response of Amplifiers; Audio Oscillators; Multi-Vibrators and Pulse Circuits; Complementary Push-Pull Power Amplifiers. Prerequisite: one full course in Electricity and Magnetism. Lectures: 3 hours per week for two terms. Lab: 3 hours per week for two terms. Text: *Electronic Devices and Circuits*, by Millman and Halkais (McGraw-Hill); *Basic Electronics for Scientists*, by Brophy (McGraw-Hill).

411A MECHANICS. Half Course. S. N. Bagchi
Kinematics of Systems of Particles and Rigid Bodies. Particle Collisions, Rocket Motion. Plane Motion of Rigid Bodies. Impulse. Particle Motion in Non-Inertial Frames. Space Motion of a Particle. Rigid Body Motion about a Fixed Point, Gyroscopes. Introduction to Equations of Lagrange

and Hamilton. Prerequisite: Physics 311B. Lectures: 3 hours per week, first term. Text: *Mechanics*, by W. Arthur and K. Fenster.

413B ADVANCED MECHANICS. Half Course. S. N. Bagchi
Lagrange Equations, Variational Principles, Central Force Scattering. Kinematics of Rigid Bodies Using Orthogonal Matrices — Cayley-Klein Parameters and Pauli Spin Matrices. Rigid Body Motion — Covariant Lagrangian and Hamiltonian Equations. Minimal Principles. Canonical Transformations. Lagrange and Poisson Brackets. Hamilton-Jacoby Theory. Small Oscillations. Prerequisite: Physics 320Z or 324Z and 411A. Lectures: 3 hours per week with bi-weekly assignments, second term. Text: *Classical Mechanics* by H. Goldstein (Addison-Wesley).

414Z ADVANCED MECHANICS. Full Course. C. S. Kalman
Review of Vector Calculus. Kinematics of particle Motion. Moving Coordinate Systems. One-Dimensional Motion. Introduction to Lagrange's and Hamilton's Equations of Motion. Conservative Motion with Emphasis on Central Forces. Systems of Particles Rigid Bodies. Emphasis will be on illustrating the method of attacking physical problems and the mathematical tools used in solving them. Prerequisite: one full course in Physics and two full courses in Calculus. Lectures: 3 hours per week for two terms. Text: *Introduction to the Principles of Mechanics*, by Hauser (Addison-Wesley).

420Z METHODS OF MATHEMATICAL PHYSICS II. Full Course. R. L. Kovacs
General Concepts of Analysis. Partial Differential Equations of Physics. Function Spaces and Orthogonal Sets. Sturm-Liouville Problem. Fourier Series and Fourier Integral. Special functions: Legendre, Bessel. Prerequisite: Physics 320Z or 324Z and Math 335 and Math 337. Lectures: 3 hours per week for two terms.

503A NUCLEAR PHYSICS. Half Course. C. E. Eappen
Radioactivity, Decay Laws. Nuclear Transitions and Reactions — Passage of Radiation through matter. Detection and Acceleration of Particles. Nuclear Structure and Models. Neutrons. Introduction to High Energy Physics. Prerequisite: Physics 400Z or 402Z. Lectures: 3 hours per week, first term. Lab: 3 hours per week, first term.

505B INTRODUCTION TO SOLID STATE PHYSICS. Half Course. M. S. Dubas.
Crystal Structure of Solids. Crystal Diffraction. Lattice Dynamics. Specific Heat. Electrons in Metals, Free Electron Theory of Conduction, Band Theory, Semi-Conductors, dielectric and Magnetic Properties of Solids, and related special topics. Prerequisite: Physics 400Z or 402Z, and Physics 404Z unless taken concurrently. Lectures: 3 hours per week, second term. Lab: 3 hours per week, second term. Text: *Introduction to Solid State Physics*, by Charles Kittel (John Wiley & Sons, Inc.) (4th Ed.).

511A RELATIVITY. Half Course. T. A. Kovats
Classical Theory of some Light Experiments. Postulates of the Special Theory. Lorentz Transformation. Relativistic Kinematics. Relativistic Mechanics of a Particle. Four-Dimensional Formulation of the Special Theory. Electrodynamics in a Vacuum. Introduction to the General Theory. Prerequisite: Physics 320Z and 414 or equivalent with their prerequisites. Lectures: 3 hours per week with assigned problems, first term.

512Z ELECTROMAGNETIC THEORY. Full Course. C. S. Kalman
Derivation of the Laws of Electrostatics and Magnetostatics from the Basic Experimental Laws, Method of Images, Delta Functions. Maxwell's

Equations, Wave Solutions in Various Media, Wave Guides, Solutions of Laplace's Equation. Helmholtz Equation and Wave Equation by Green's Functions; Multipole Fields, Interaction of Charged Particles, Radiation of Moving Charges. Abraham-Lorentz Theory. Prerequisite: Physics 308Z or 300Z, and Physics 420Z. Lectures: 3 hours per week for two terms. Text: *Classical Theory of Electric and Magnetic Fields*, by R. H. Good and T. J. Nelson.

514Z QUANTUM MECHANICS. Full Course. R. L. Kovacs
Wave Functions and Operators. Fluctuations, Correlations and Eigen Functions. Classical Limit, Ehrenfest's Theorem and WKB Approximation. Algebraic Methods: Harmonic Oscillator; Angular Momentum. Vector Operators. Three-Dimensional Oscillator. Free Particle, Parity. The Effect of Magnetic Field. Matrix Formulation of Quantum Theory. Spin. Perturbation Theory. Theory of Scattering. Prerequisite: Physics 400Z or 402Z and Physics 420Z. Lectures: 3 hours per week for two terms.

Psychology

Chairman: H. BAUER

Courses leading to B.Sc. with a Major in Psychology

UNIVERSITY I	UNIVERSITY II	UNIVERSITY II
Psychology 301B, 303A	Psychology 401A, 403B	Psychology
Psychology 300Z	Psychology	Psychology
Chemistry 326A	Science elective*	Science Elective*
Chemistry 328B	Elective	Elective
Biology 320Z	Elective	Elective
Elective		

Students entering this programme must have successfully completed the Science programme at the CEGEP level. Minimum requirements would therefore, be two full courses in Mathematics, one full course in Chemistry and Physics and one half course in Biology.

**Science electives must be chosen from the following Departments: Physics, Chemistry, Biology, Geology, Mathematics.*

The Department of Psychology offers a Major programme leading to both a B.A. and a B.Sc. In addition, *arrangements can be made for a joint Psychology/Biology Major*, as well as for double majors with other departments. The curriculum is designed to provide for a broad general education, as well as to give adequate preparation for graduate studies in Psychology. Although we offer some courses in applied psychology, the major emphasis of the programme is theoretical and experimental.

A Major in Psychology consists of a minimum of six courses in the subject, including 300, 301B and 303A in the first year and 401A and 403B in the second year. These courses will provide the student with not only the practical experience in psychological research of all types, but also an understanding of the philosophical and scientific origins of Psychology and of the epistemological basis of scientific research methodologies.

In addition to the required and elective courses the department offers at the third year level courses which can be adapted to a student's specific needs, (Psychology 500-Z, 502-Z, 506-Z). Students wishing to take Psychology 500-Z, Advanced Experimental Psychology, should register at the end of their second year. Acceptance will only be finalized after submission of a definite research proposal not later than three weeks after beginning of the Fall term. Students wishing to take Psychology 506-Z, Directed Readings, should prepare, before the beginning of the Fall term, a list of books that have relevance to the problem area undertaken for study by the student. For courses at the 400 and 500 level specific prerequisites are required. *The relevant prerequisites are listed with each course. Students wishing to take these courses who do not have the necessary prerequisites may register for the course with approval of the instructor.* Courses 300 to 310 are available to students in all three years. Students are advised to consult with the instructor for more detailed information than is provided in the calendar.

300Z HISTORICAL APPROACH TO SYSTEMATIC PSYCHOLOGY. Full Course.
J. Campbell, H. Ladd, M. Shames

This is a comprehensive course which is intended to give an appreciation of how and why Psychology developed as it did in relation to historical-cultural milieu, major trends in intellectual history, contending philosophical assumptions and technical and methodological developments. Lectures: 3 hours per week for two terms.

301B STATISTICS. Half Course. R. Lambert
Material presented in this course will include: Probability theory, frequency and probability distribution, measures of central tendency and dispersion, theory of sampling distributions, normal distributions, theory of hypotheses testing and the theory of inferences about population means. This material is intended to provide both a theoretical and a practical foundation in statistics for the student interested in conducting or utilizing the results of psychological research. Lectures: 3 hours per week, second term.

303A RESEARCH METHODS I. Half Course. V. Maheux, R. Seens
A lecture and laboratory course in basic methods used in psychological research. Students will be required to design, conduct, analyse and report on a number of experiments. Required course for all majors in Psychology. Lectures: 3 hours per week, first term. Lab: 3 hours per week, first term.

302Z MOTIVATION. Full Course. R. Seens
A study of determinants (genetics, neural, hormonal, stimulus, experiential) of behaviour. Consideration of the initiation, direction and regulation of behaviour. Animal and human data and the physiological bases of motivation are considered. Lectures and Seminars: 3 hours per week for two terms.

304Z DEVELOPMENTAL PSYCHOLOGY. Full Course. E. Mouledoux
A study of physical, cognitive, emotional and social development, with emphasis on childhood and adolescence and on normal development, with some consideration of age-related deviant patterns. The course is given in lecture style, but with weekly informal workshops on special interest areas and on the development of student's skills in observational methods. Students are required to carry out observations of children in a variety of natural settings. Lectures: 3 hours per week for two terms.

306Z PERSONALITY: INTRODUCTORY EXPLORATIONS. Full Course. P. Babarik
The organization, functioning and development of personality will be elaborated according to dynamic personality theory as developed by Freud and contemporary personologists. Evidence from experimental and field studies which are relevant to personality will be related to the basic theoretical development. Lectures: 3 hours per week for two terms.

308F SENSATION AND PERCEPTION. Full Course. S. Thorpe
In this course the importance of sensory systems in interpreting (perception) as well as receiving (sensation) information about the external world will be considered. The psychophysical study of the five human senses will be complemented by behavioural and neurophysiological studies in animals. General principles of sensory function and their interrelationships will be stressed. Lectures: 6 hours per week, first term.

310Z LEARNING. Full Course. H. Ladd
The course is a study of behaviour in terms of the principles of conditioning and learning. The first half of the course is concerned with the basic issues central to conditioning and learning. In the second half the emphasis is on human learning. Lectures: 3 hours per week for two terms. Lab: To be scheduled during regular classes.

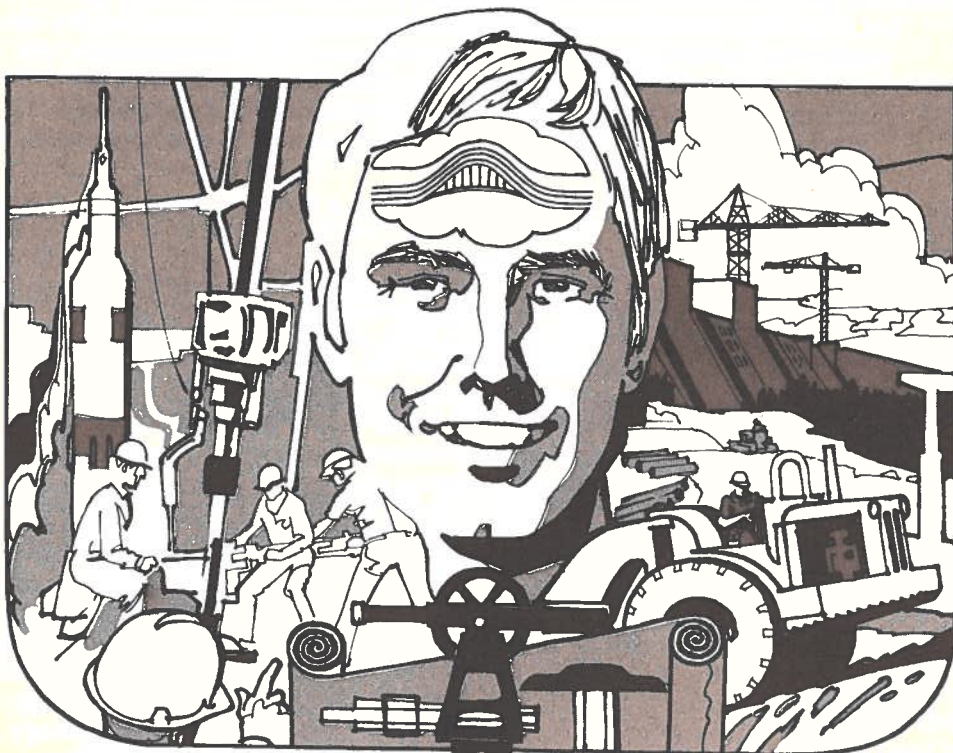
400Z HISTORY OF PSYCHOLOGY. Full Course. E. Mouledoux
A survey of the historical antecedents of modern theoretical and applied

psychologies with application of the historical perspective to understanding the twentieth century systems of psychology and some contemporary theories, methods, issues, and trends within the discipline. The course is given in seminar style with at least one written paper. Prerequisite: Psychology 300, 301, 303. Lectures: 3 hours per week for two terms.

- 401A **STATISTICS.** Half Course. R. Lambert
Material presented in this course will include: Chi-square and F distributions, the "fixed effects" models for analysis of variance, regression and correlation. Chi-square tests and non-parametric tests of hypotheses. This material is intended to provide both a theoretical and a practical foundation in statistics for the student interested in conducting or utilizing the results of psychological research. Prerequisite: Psychology 301, 303. Lectures: 3 hours per week, first term.
- 403B **RESEARCH METHODS II.** Half Course. V. Maheux, R. Seens
This course is a continuation of Research Methods I. This part of Research Methods will be devoted to a critical examination of more complex experimental designs used in Psychology. Students will be required to design, conduct and evaluate experiments; and an opportunity will be provided for independent research. Prerequisite: Psychology 301, 303. Lectures: 3 hours per week, second term. Lab: 3 hours per week, second term.
- 402Z **SOCIAL PSYCHOLOGY.** Full Course. M. Shames
An introduction to the methodology, concepts and research in some areas of contemporary social psychology. Group dynamics such as coalition formation, group problem-solving, communication networks, and leadership will be considered along with social influences such as interpersonal perception, conformity, attitude development and change, and aggression. Prerequisite: Psychology 300, 301, 303. Lectures: 3 hours per week for two terms.
- 404Z **PRACTICUM IN EARLY CHILDHOOD DEVELOPMENT.** Full Course. E. Mouledoux
This course combines an intensive study of development in early childhood with practical experience in a pre-school. In addition to one class meeting per week, each student must be able to commit himself or herself to three hours per week of observation and work as a teacher's aide in the college related day nursery. After an introductory study of nursery school philosophy and observational methods, weekly seminars and reading will focus on aspects of child development which are observable in the nursery school, such as motor development, language, play, social interaction, concept formation, use of art and play materials, behaviour in routine situation, etc. The course assumes previous course work in developmental psychology or its equivalent. Prerequisite: Psychology 300, 304. Lectures: 3 hours per week for two terms.
- 406Z **COMMUNITY PSYCHOLOGY.** Full Course. P. Babarik
This course will relate psychology to the problems of man-in-society and consider basic areas of psychological knowledge as they bear upon the behaviour of man-in-institutions; that is the strategies that man used to create a habitat which in turn determines his development. The contributions of psychology to community leadership in the search for new and better personal social, cultural and ecological arrangements will be considered as they relate to such institutions as industry, education and the health, welfare and political structures. Prerequisite: Psychology 300. Lectures and Seminars: 3 hours per week for two terms.

- 408Z **HUMAN INFORMATION PROCESSING.** Full Course. J. Campbell
Examines the way in which sensory input is transformed, recognized, stored, recovered and used. The course looks at pattern and speech recognition, memory, and attention, decision making and reasoning in the context of recent experimental and theoretical work. Prerequisite: Psychology 300. Lectures: 3 hours per week for two terms.
- 410Z **SCALING AND PSYCHOMETRIC THEORY.** Full Course.
(Offered in the Evening Division 1973-74 only). This course is designed to introduce the student to measurement theory and scaling methods, fractionation methods and equisection methods. Basic psychometric principles will be dealt with including such topics as measures of validity, theory of measurement error, assessment of reliability, etc. This course will have special appeal to those students interested in attitude measurement and test construction. Prerequisite: Psychology 300, 301, 303. Lectures: 3 hours per week for two terms. Lab: Possibly seminars and/or labs.
- 412Z **ANIMAL BEHAVIOR.** Full Course. H. Bauer
The study of animal behaviour, its description, function and causes, from a comparative bio-psychological point of view. Prerequisite: Psychology 300. Lectures: 3 hours per week for two terms. Possibly seminars and/or labs scheduled during regular lecture periods.
- 414Z **PHYSIOLOGICAL PSYCHOLOGY.** Full Course. V. Maheux
A study of some biochemical and physiological mechanisms underlying behaviour. The topics studied include enzymes; nucleic acids; the nervous endocrine and sensory systems; response mechanisms; emotions; etc. A good background in biology, though not required, is strongly recommended. The course is designed for Majors in Psychology. Prerequisite: Psychology 300, 301, 303. Lectures: 3 hours per week for two terms.
- 500Z **ADVANCED EXPERIMENTAL.** Full Course. J. Campbell
This course is designed for advanced, third year students, with the major emphasis on the execution of a major research project in the student's particular area of interest. Prerequisite: Psychology 300, 301, 303, 401, 403. Seminars: 3 hours per week for two terms.
- 502Z **CONTEMPORARY ISSUES.** Full Course.
- 504Z **MATHEMATICAL THEORIES OF BEHAVIOR.** Full Course. R. Lambert
This course is intended to demonstrate how mathematical concepts and techniques are employed in the formulation of psychological theories. Theories of simple learning, perception, decision making and reasoning will be examined. The course presupposes no particular background in mathematics and will be taught at a level of mathematical sophistication determined by the skills that students bring to it. It is a course that may be of interest to the general student of science, or to the psychology student seriously concerned with problems in theoretical psychology. Prerequisite: Psychology 300, 301, 303, 401, 403 or instructor's permission. Lectures: 3 hours per week for two terms.
- 506Z **DIRECTED READINGS.** Full Course. Staff
Prerequisite: Psychology 300, 301, 303, 401, 403.
- 050Z **INDEPENDENT STUDIES.** Full Course.

of Faculty ENGINEERING



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Faculty of Engineering

The overall objectives of the Faculty of Engineering are the growth and development of the student into a self-identifiable person and the acquisition by him of the knowledge upon which to build his career. In the concrete, these goals are proposed to the student as a personal search for excellence and the development of a suitable character to manage industry, whether technically or administratively.

While the subjects of the curriculum — technology, science, humanities, professional practice — have to be presented as discrete disciplines, the Faculty seeks at all times to make the student aware that he must integrate them into his personality so that they become the foundation for supporting this chief function in society — the making of decisions.

PROGRAM

The Faculty of Engineering offers in 1973/74 all years of the three year university program. On the successful completion of the university program, students are awarded a Bachelor of Science degree. Although the curricula of the programs are designed to enable students to pursue advanced studies in engineering, science or business at other universities, nevertheless, those who do not elect to do so, will find themselves well prepared for a career in industry at a high technological level. Students aspiring to practice as professional engineers are advised to register in an option described as a professional curriculum.

CURRICULA

The first year of the university program is common to all students; the two upper years are specialized. Applications are invited from graduates of Collegial programs.

During 1973-74, the second Collegial (CEGEP) year program will be offered for the last time. Inquiries are also invited about entrance into this program.

OPTIONS

The curricula are made up of eight elective blocks of courses: two in Civil Engineering, three in Electrical Engineering, three in Mechanical Engineering. These eight options are described at the beginning of the lecture schedules appropriate to each of the above three areas of Engineering

CONSULTATION

Ready access to the members of the staff for consultation by students is provided. While this consultation is designed for those already enrolled in the program, it is suggested that those accepted for entry into the first university year, seek an interview before September. This can be done by calling the Dean of Engineering's office at Loyola, 514-482-0320.

PROMOTION

The promotion on overall average of at least 60% of the weighted marks is required and at least 50% in each separate examination or "PASS" where such grading is permitted. A student who fails to achieve promotion and wishes to discuss the possibility of continuing his academic career in the Faculty of Engineering must apply IN WRITING to the Dean of Engineering, before July 15.

ADMISSION TO THE UNIVERSITY

1. *For graduates of a CEGEP or Collegial program outside of Loyola*
 - (1) The applicant must have followed a Science-Engineering curriculum.
 - (2) The applicant must have achieved at least the minimum mark required by the Ministry of Education of Quebec for graduation from the Science-Engineering curriculum of a CEGEP.

2. For engineering students of other universities

The applicant should write to the Dean of Engineering, Loyola of Montreal for information.

FACULTY

Dean and Professor

JOLY, G.W., B.A. (Montreal), B.Eng. (McGill), M.Eng. (McGill), P.Eng.

Associate Professors

GOLDMAN, C., B.Eng. (McGill), M.Eng. (McGill), P.Eng.

KRAKOW, K.I., B.Eng. (McGill), M.S. (California Institute of Technology), P.Eng.

KUBINA, S.J., B.Eng. (McGill), M.Eng. (McGill), Ph. D (McGill), P. Eng.

Assistant Professors

KRANTZBERG, J.A., B.Eng. (McGill), M.Sc. (McGill), P.Eng.

NEEMEH, R.A., B.Eng. (Alexandria), M.Eng. (McGill).

STEFANOVIĆ, V.R., B.Eng. (Belgrade), M.Eng. (McGill), Dipl. Eng.

WARDELL, H., S.J., B.A. (Montreal).

Lecturer

CERNY, E., B.Sc. (U. of M.), M.Eng. (McGill).

Sessional Lecturers

ADKAR, C.K., B.Eng. (Rensselaer Polytechnic Institute), M.Eng. (McGill), P.Eng.

AHAD, S.E., B.Eng. (Cairo), M.Eng. (McGill).

COSGROVE, W., M. Eng. (McGill), P.Eng.

KUNSTADT, P., B.Eng. (Kisice, Czechoslovakia).

MARIN, M., M.S. (Madrid), Ph.D. (McGill).

NEILSON, S.A., B.Sc. (Eng.) (McGill), P.Eng. M.E.I.C. (Life).

ORR, J.E., M.Sc. (Berkeley), P.Eng.

RAUCH, S., B.Eng. (Hons), (McGill), M.Eng. (McGill), P.Eng.

Civil Engineering

OPTION A — The Civil Engineering Curriculum is a professional one, prepared for students whose goal is either the design of structures or the design and control of engineering systems.

FIRST YEAR

COURSE	Course Number	Wgtd. Mark	Lect. Hrs.		Lab. Hrs.	
			1st	2nd	1st	2nd
Mechanics of Materials I	E-011	75	2	—	1	—
Mechanics of Materials II	E-031	75	—	2	—	1
Dynamics	E-037	75	3	—	—	—
Numerical Analysis	E-131	75	3	—	—	—
Professional Practice	E-311	50	—	2	—	—
History of Engineering	E-312	75	—	3	—	—
Materials Science	E-801	100	2	2	—	—
Differential Equations	M-312	100	2	2	—	—
Plus						
Either Thermodynamics	E-736	75	—	3	—	—
*Or Elective		75	—	3	—	—
Plus						
Either Circuit Analysis	E-631	75	3	—	3	—
And Electrical Engi	E-632	100	—	3	—	3
Or Circuits & Electronics	E-621	175	3	3	3	3
Totals		875	15	17	4	4

*Choice of elective should be made after consultation with engineering staff.

SECOND YEAR

*Dynamics	E-037	75	3	—	—	—
Strength of Materials Lab.	E-042	50	—	—	3	—
Structural Analysis I	E-138	100	1	1	2	2
Structural Design I	E-235	75	—	2	—	3
Surveying	E-534	75	2	—	2	—
Fluid Mechanics I	E-737	75	3	—	—	—
Geology	G-201	100	—	3	—	3
Economics or Intro. Bus. Anal.	—	100	3	3	—	—
**Elective	—	100	3	3	—	—
Total		750	15	12	7	8

*In 1973-74 only.

THIRD YEAR

Reinforced Concrete	E-269	75	—	2	—	3
Soils Mechanics & Foundations	E-567	125	2	2	3	—
Transportation Engineering	E-568	75	2	—	2	—
Sanitary Engineering	E-569	75	—	2	—	2
Town Planning	E-571	75	—	2	—	2
Municipal Engineering	E-572	50	2	—	—	—
**Elective	—	100	3	3	—	—
Plus						
Either Struct. Design II	E-268	75	—	2	—	3
Or Prod. Management	B-470	100	3	—	—	—
Plus						
Either Struc. Anal. II	E-172	75	2	—	2	—
And Management & Specification	E-570	50	2	—	—	—
Or Administrative Pract.	B-414	100	3	3	—	—
Total		750/800	12/16	13/14	5/7	7/10

**This elective may have to be taken from a specified list of courses approved by Senate.

Civil Engineering

OPTION B — This option is a professional curriculum in Civil Engineering emphasizing engineering fundamentals and providing an introduction to Business Administration. This curriculum is recommended to students interested in construction management and aspiring to professional careers in the construction industry.

FIRST YEAR

COURSE	Course Number	Wgtd. Mark	Lect. Hrs.		Lab. Hrs.	
			1st	2nd	1st	2nd
Mechanics of Materials I	E-011	75	2	—	1	—
Mechanics of Materials II	E-031	75	—	2	—	1
Dynamics	E-037	75	3	—	—	—
Numerical Analysis	E-131	75	3	—	—	—
Professional Practice	E-311	50	—	2	—	—
History of Engineering	E-312	75	—	3	—	—
Materials Science	E-801	100	2	2	—	—
Differential Equations	M-312	100	2	2	—	—
Plus						
Either Thermodynamics	E-736	75	—	3	—	—
*Or Elective		75	—	3	—	—
Plus						
Either Circuit Analysis	E-631	75	3	—	3	—
And Electrical Engi.	E-632	100	—	3	—	3
Or Circuits & Electronics	E-621	175	3	3	3	3
Totals		875	15	17	4	4

*Choice of elective should be made after consultation with engineering staff.

SECOND YEAR

**Dynamics	E-037	75	3	—	—	—
Strength of Mat. Lab.	E-042	50	—	—	3	—
Structural Analysis I	E-139	50	1	—	2	—
Structural Design I	E-235	100	—	2	—	3
Surveying	E-534	75	2	—	2	—
Fluid Mechanics I	E-737	75	3	—	—	—
Geology	G-201	100	—	3	—	3
*Accounting	A-300	100	3	3	—	—
Business Analysis	B-312	100	3	3	—	—
*Economics	EC	100	3	3	—	—
Total		825	18	14	7	6

*If the student has already taken an equivalent course he may choose another course.

**In 1973-74 only.

THIRD YEAR

Reinforced Concrete	E-269	75	—	2	—	3
Soil Mechanics & Foundations	E-567	125	2	2	3	—
Transportation Engi.	E-568	75	2	—	2	—
Town Planning	E-571	75	—	2	—	2
Municipal Engineering	E-572	50	2	—	—	—
Production Management	B-470	150	3	3	—	—
Commercial Law	B-502	150	3	3	—	—
Construction Management	E-573	150	3	3	—	—
Elective		100	3	3	—	—
Totals		950	18	18	5	5

Electrical Engineering

OPTION A — A Professional Curriculum with a strong core of basic electrical engineering courses and a wide range of technical electives from the several fields of electrical engineering. Emphasis is placed on electronics, control systems and microwaves, either as areas for graduate study or as bases for a professional career in industry.

FIRST YEAR

COURSE	Course Number	Wgtd. Mark	Lect. Hrs.		Lab. Hrs.	
			1st	2nd	1st	2nd
Mechanics of Materials I	E-011	75	2	—	1	—
Mechanics of Materials II	E-031	75	—	2	—	1
Dynamics	E-037	75	3	—	—	—
Numerical Analysis	E-131	75	3	—	—	—
Professional Practice	E-311	50	—	2	—	—
History of Engineering	E-312	75	—	3	—	—
Materials Science	E-801	100	2	2	—	—
Differential Equations	M-312	100	2	2	—	—
Plus						
Either Thermodynamics	E-736	75	—	3	—	—
*Or Elective		75	—	3	—	—
Plus						
Either Circuit Analysis	E-631	75	3	—	3	—
And Electrical Engi.	E-632	100	—	3	—	3
Or Circuits & Electronics	E-621	175	3	3	3	3
Totals		875	15	17	4	4

*Choice of elective should be made after consultation with engineering staff.

SECOND YEAR

Electronic Circuits & Devices	E-635	125	3	—	3	—
Network Analysis	E-636	75	3	—	—	—
Electrical Machines	E-637	100	3	—	3	—
Electromagnetic Theory	E-638	75	—	3	—	—
Solid State Physics	E-639	75	—	3	—	—
Switching Circuits	E-640	100	—	3	—	3
*Thermodynamics I	E-736	75	—	3	—	—
Fluid Mechanics I	E-737	75	3	—	—	—
Probability & Statist.	M-	75	3	—	—	—
Engineering Mathe.	M-315	75	3	—	—	—
Mathematics for Engrs.	M-317	75	—	3	—	—
**Elective		50	—	3	—	—
Totals		975	18	18	6	3

*In 1973-74 only

(Continued)

THIRD YEAR

COURSE	Course Number	Wgtd. Mark	Lect. Hrs.		Lab. Hrs.	
			1st	2nd	1st	2nd
Control Simul. Lab.	E-171	75	—	—	—	3
Control Systems	E-173	75	3	—	—	—
Technical Project	E-367	100	—	—	3	6
Communication Systems	E-667	75	3	—	—	—
Solid State Devices & Integ. Circ. Sys.	E-676	100	—	3	—	3
**Elective		100	3	3	—	—
Plus 2 Electives from						
Intro. to Digital Comp. Eng.	E-135	150	2	2	2	2
Digital Computer Systems	E-168	75	—	3	—	—
Electromotor Systems	E-672	100	—	3	—	3
E.M. Transmission & Radiation	E-674	100	3	—	3	—
*Linear Control Systems	E-174	75	3	—	—	—
*Nonlinear Control Systems	E-176	75	—	3	—	—
*Control Inst. Circuits & Devices	E-671	100	—	3	—	3
*Electrical Machines II	E-673	100	—	3	—	3
*Acoustics	E-677	100	—	3	—	3
Commercial Law	B-512	100	3	3	—	—
Production Management	B-470	75	—	3	—	—
Totals		675/775	9/15	6/12	3/8	12/17

*Not offered in 1973-74

****This elective may have to be taken from a specified list of courses approved by Senate.**

Electrical Engineering

OPTION B — A Professional Curriculum of the same general nature outlined in Option A. However emphasis is placed on digital computer techniques and computer engineering to form, as in Option A, areas for graduate study or bases for a professional career in industry.

FIRST YEAR

COURSE	Course Number	Wgtd. Mark	Lect. Hrs.		Lab. Hrs.	
			1st	2nd	1st	2nd
Mechanics of Materials I	E-011	75	2	—	1	—
Mechanics of Materials II	E-031	75	—	2	—	1
Dynamics	E-037	75	3	—	—	—
Numerical Analysis	E-131	75	3	—	—	—
Professional Practice	E-311	50	—	2	—	—
History of Engineering	E-312	75	—	3	—	—
Materials Science	E-801	100	2	2	—	—
Differential Equations	M-312	100	2	2	—	—
Plus						
Either Thermodynamics	E-736	75	—	3	—	—
*Or Elective		75	—	3	—	—
Plus						
Either Circuit Analysis	E-631	75	3	—	3	—
And Electrical Engi.	E-632	100	—	3	—	3
Or Circuits & Electronics	E-621	175	3	3	3	3
Totals		875	15	17	4	4

*Choice of elective should be made after consultation with engineering staff.

SECOND YEAR

Intro. to Digital Comptr. Eng.	E-135	150	2	2	2	2
Computer Aided Design	E-137	100	—	3	—	2
Network Analysis	E-636	75	3	—	—	—
Electromagnetic Theory	E-638	75	—	3	—	—
Switching Circuits	E-640	100	—	3	—	3
*Thermodynamics I	E-736	75	—	3	—	—
Fluid Mechanics	E-737	75	3	—	—	—
Probability & Statistics	M-	75	3	—	—	—
Engineering Mathematics	M-315	75	3	—	—	—
Mathematics for Engrs.	M-317	75	—	3	—	—
**Elective		50	3	—	—	—
Totals		925	17	17	2	7

*In 1973-74 only

****This elective may have to be taken from a specified list of courses approved by Senate.**

Electrical Engineering

(Continued)

THIRD YEAR

COURSE	Course Number	Wgtd. Mark	Lect. Hrs.		Lab. Hrs.	
			1st	2nd	1st	2nd
Control & Simulation Lab.	E-171	75	—	—	—	3
Control Systems	E-173	75	3	—	—	—
Technical Project	E-367	100	—	—	3	6
Electrical Machines	E-637	100	3	—	3	—
Solid State Devices & Integ. Circ. Sys.	E-676	100	—	3	—	3
**Fluid Mechanics I	E-737	75	3	—	—	—
***Elective		100	3	3	—	—
Plus 2 Electives from						
Digital Computer Sys.	E-168	75	—	3	—	—
*Nonlinear Control Sys.	E-176	75	—	3	—	—
*Computer Aided Design II	E-177	100	3	—	3	—
Cost Engineering	E-368	150	3	3	—	—
Electronic Circuits & Devices	E-635	125	3	—	3	—
Theory of Automata	CS-551	75	—	3	—	—
Computer Languages	CS-553	100	3	—	2	—
Operations Analysis	B-518	100	3	3	—	—
Totals		775/900	12/18	6/12	6/11	12

*Not Offered in 1973-74

**In 1973-74 only

***May have to be taken from a specified list of courses approved by Senate.

Electrical Engineering

OPTION C — Designates interdisciplinary program suitable for students with aspirations towards Business Management. A comprehensive course selection is made under faculty guidance from the courses listed in the options above or as alternative courses.

FIRST YEAR

COURSE	Course Number	Wgtd. Mark	Lect. Hrs.		Lab. Hrs.	
			1st	2nd	1st	2nd
Mechanics of Materials I	E-011	75	2	—	1	—
Mechanics of Materials II	E-031	75	—	2	—	1
Dynamics	E-037	75	3	—	—	—
Numerical Analysis	E-131	75	3	—	—	—
Professional Practice	E-311	50	—	2	—	—
History of Engineering	E-312	75	—	3	—	—
Materials Science	E-801	100	2	2	—	—
Differential Equations	M-312	100	2	2	—	—
Plus						
Either Thermodynamics	E-736	75	—	3	—	—
*Or Elective		75	—	3	—	—
Plus						
Either Circuit Analysis	E-631	75	3	—	3	—
And Electrical Engi.	E-632	100	—	3	—	3
Or Circuits & Electronics	E-621	175	3	3	3	3
Totals		875	15	17	4	4

*Choice of elective should be made after consultation with engineering staff.

SECOND YEAR

Computer Aided Design I	E-137	100	—	3	—	2
Network Analysis	E-636	75	3	—	—	—
Switching Circuits	E-640	100	—	3	—	3
*Thermodynamics I	E-736	75	—	3	—	—
Fluid Mechanics	E-737	75	3	—	—	—
Probability and Statistics	M-	75	3	—	—	—
Economics	EC-300	100	3	3	—	—
Intro. to Business Analysis	B-312	100	3	3	—	—
**Elective		100	3	3	—	—
Total		800	18	18	—	5

*In 1973-74 only

**This elective may have to be taken from a specified list of courses approved by Senate.

THIRD YEAR

Control & Simulation Lab.	E-171	75	—	—	—	3
Control Systems	E-173	75	3	—	—	—
Technical Project	E-367	100	—	—	3	6
*Elective		100	3	3	—	—
Plus 4 Electives from						
Cost Engineering	E-368	150	3	3	—	—
Electronic Circuits & Devices	E-635	125	3	—	3	—
Electrical Machines I	E-637	100	3	—	3	—
Production Management	B-470	50	—	3	—	—
Commercial Law	B-502	100	3	3	—	—
Operations Analysis	B-518	100	3	3	—	—
Business Economics	B-204	50	3	—	—	—
Admin. of the Firm	B-509	50	—	3	—	—
Mathematical Models	CS-425	50	—	2	—	1
Totals		350/825	6/18	3/15	3/9	9/10

*This elective may have to be taken from a specified list of courses approved by Senate.

Mechanical Engineering

OPTION A — This option is a professional curriculum for Mechanical Engineering emphasizing the design of mechanical components, machines and systems. This curriculum is recommended to students interested in design and aspiring to proceed to post-graduate studies in Mechanical Engineering and/or professional careers in industry.

FIRST YEAR

COURSE	Course Number	Wgtd. Mark	Lect. Hrs.		Lab. Hrs.	
			1st	2nd	1st	2nd
Mechanics of Materials I	E-011	75	2	—	1	—
Mechanics of Materials II	E-031	75	—	2	—	1
Dynamics	E-037	75	3	—	—	—
Numerical Analysis	E-131	75	3	—	—	—
Professional Practice	E-311	50	—	2	—	—
History of Engineering	E-312	75	—	3	—	—
Materials Science	E-801	100	2	2	—	—
Differential Equations	M-312	100	2	2	—	—
Plus						
Either Thermodynamics	E-736	75	—	3	—	—
*Or Elective		75	—	3	—	—
Plus						
Either Circuit Analysis	E-631	75	3	—	3	—
And Electrical Engi.	E-632	100	—	3	—	3
Or Circuits & Electronics	E-621	175	3	3	3	3
Totals		875	15	17	4	4

*Choice of elective should be made after consultation with engineering staff.

SECOND YEAR

Mechanics of Machines	E-036	75	—	3	—	3
*Dynamics	E-037	75	3	—	—	—
Strength of Materials Lab	E-042	50	—	—	3	—
Systems Analysis	E-134	100	2	2	—	—
Mechanical Design & Stress Analysis	E-234	150	2	2	3	3
**Manufacturing Processes	E-735	50	—	2	—	—
*Thermodynamics I	E-736	75	—	3	—	—
Fluid Mechanics I	E-737	75	3	—	—	—
**Heat Transfer	E-771	50	—	2	—	—
Metallurgy for Engrs.	E-834	50	2	—	—	—
Engineering Maths.	M-315	75	3	—	—	—
Mathematics for Engrs.	M-317	75	—	3	—	—
***Elective	—	100	3	3	—	—
Totals		950	18	18	6	6

*1973-74 only

**offered in alternate years.

Course 735 will be offered in 1973-74

***This elective may have to be taken from a specified list of courses approved by Senate.

Mechanical Engineering

(Continued)

THIRD YEAR

COURSE	Course Number	Wgtd. Mark	Lect. Hrs.		Lab. Hrs.	
			1st	2nd	1st	2nd
Mechanical Vibrations	E-067	75	3	—	—	—
Control Systems	E-173	75	3	—	—	—
Advanced Systems Analysis	E-169	75	—	3	—	—
Mechanical Stress Analysis	E-175	75	—	2	—	3
Mechanical Design	E-267	75	2	—	3	—
*Manufacturing Processes	E-735	50	—	2	—	—
Experimental Engi.	E-767	50	1	—	3	—
Mechanical Engineering Lab.	E-768	50	—	—	—	3
Thermodynamics II	E-769	75	3	—	—	—
Fluid Mechanics II	E-770	75	—	3	—	—
*Heat Transfer	E-771	50	—	2	—	—
Applied Thermodynamics	E-772	75	—	3	—	—
Fluid Machinery	E-773	75	3	—	—	—
**Elective		100	3	3	—	—
Totals		925	18	16	6	6

*Offered in alternate years. Course 735 will be offered in 1973-74

**This elective may have to be taken from a specified list of courses approved by Senate.

Mechanical Engineering

OPTION B — This option is a professional curriculum in Mechanical Engineering emphasizing engineering fundamentals and providing an introduction to Business Administration. This curriculum is recommended to students interested in production and industrial engineering and aspiring to professional careers in industry.

FIRST YEAR

COURSE	Course Number	Wgtd. Mark	Lect. Hrs.		Lab. Hrs.	
			1st	2nd	1st	2nd
Mechanics of Materials I	E-011	75	2	—	1	—
Mechanics of Materials II	E-031	75	—	2	—	1
Dynamics	E-037	75	3	—	—	—
Numerical Analysis	E-131	75	3	—	—	—
Professional Practice	E-311	50	—	2	—	—
History of Engineering	E-312	75	—	3	—	—
Materials Science	E-801	100	2	2	—	—
Differential Equations	M-312	100	2	2	—	—
Plus						
Either Thermodynamics	E-736	75	—	3	—	—
*Or Elective		75	—	3	—	—
Plus						
Either Circuit Analysis	E-631	75	3	—	3	—
And Electrical Engi.	E-632	100	—	3	—	3
Or Circuits & Electronics	E-621	175	3	3	3	3
Totals		875	15	17	4	4

*Choice of elective should be made after consultation with engineering staff.

SECOND YEAR

Mechanics of Machines	E-036	75	—	3	—	3
*Dynamics	E-037	75	3	—	—	—
Strength of Materials Lab.	E-042	50	—	—	3	—
Mechanical Design & Stress Analysis	E-234	150	2	2	3	3
**Manufacturing Processes	E-735	50	—	2	—	—
*Thermodynamics I	E-736	75	—	3	—	—
Fluid Mechanics I	E-737	75	3	—	—	—
**Heat Transfer	E-771	50	—	2	—	—
Metallurgy for Engrs.	E-834	50	2	—	—	—
Probability & Statistics	M-	75	3	—	—	—
Mathematics for Engrs.	M-317	75	—	3	—	—
Intro to Busi. Anal.	B-312	100	3	3	—	—
***Elective		100	3	3	—	—
Totals		950	19	19	6	6

*1973-74 only

**Offered in alternate years. Course 735 will be offered in 1973-74.

***This elective may have to be taken from a specified list of courses approved by Senate.

Mechanical Engineering

(Continued)

THIRD YEAR

COURSE	Course Number	Wgtd. Mark	Lect. Hrs.		Lab. Hrs.	
			1st	2nd	1st	2nd
Mechanical Vibrations	E-067	75	3	—	—	—
Control Systems	E-173	75	3	—	—	—
Mechanical Stress Analysis	E-175	75	—	2	—	3
Mechanical Design	E-267	75	2	—	3	—
*Manufacturing Processes	E-735	50	—	2	—	—
Experimental Engi.	E-767	50	1	—	3	—
*Heat Transfer	E-771	50	—	2	—	—
Production Management	B-470	100	3	3	—	—
Commercial Law	B-502	100	3	3	—	—
PLUS, either						
Applied Thermo.	E-772	75	—	3	—	—
Or Fluid Mechanics II	E-770	75	—	3	—	—
**Elective		100	3	3	—	—
Totals		775	18	16	6	3

*Offered in alternate years. Course 735 will be offered in 1973-74

** This elective may have to be taken from a specified list of courses approved by Senate.

Mechanical Engineering

OPTION C — This option is an interdisciplinary curriculum including basic engineering fundamentals and fundamentals of business administration. This curriculum is recommended to students basically interested in the administration of industry and who wish to obtain a sound grasp of the increasingly high technological content in industry.

FIRST YEAR

COURSE	Course Number	Wgtd Mark	Lect. Hrs.		Lab. Hrs.	
			1st	2nd	1st	2nd
Mechanics of Materials I	E-011	75	2	—	1	—
Mechanics of Materials II	E-031	75	—	2	—	1
Dynamics	E-037	75	3	—	—	—
Numerical Analysis	E-131	75	3	—	—	—
Professional Practice	E-311	50	—	2	—	—
History of Engineering	E-312	75	—	3	—	—
Materials Science	E-801	100	2	2	—	—
Differential Equations	M-312	100	2	2	—	—
Plus						
Either Thermodynamics	E-736	75	—	3	—	—
*Or Elective		75	—	3	—	—
Plus						
Either Circuit Analysis	E-631	75	3	—	3	—
and Electrical Engi.	E-632	100	—	3	—	3
Or Circuits & Electronics	E-621	175	3	3	3	3
Totals		875	15	17	4	4

*Choice of elective should be made after consultation with engineering staff.

SECOND YEAR

Mechanics of Machines	E-036	75	—	3	—	3
*Dynamics	E-037	75	3	—	—	—
Strength of Materials Lab.	E-042	50	—	—	3	—
Mechanical Design & Stress Analysis	E-234	150	2	2	3	3
**Manufacturing Processes	E-735	50	—	2	—	—
*Thermodynamics I	E-736	75	—	3	—	—
**Heat Transfer	E-771	50	—	2	—	—
Metallurgy for Engrs.	E-834	50	2	—	—	—
Probability & Statistics	M-	75	3	—	—	—
Intro Business Analy	B-312	100	3	3	—	—
Economics	EC-	100	3	3	—	—
***Elective	—	100	3	3	—	—
Totals		900	19	19	6	6

*1973-74 only.

**Offered in alternate years. Course 735 will be offered in 1973-74

***This elective may have to be taken from a specified list of courses approved by Senate.

THIRD YEAR

Mechanical Design	E-267	75	2	—	3	—
*Manufacturing Processes	E-735	50	—	2	—	—
Fluid Mechanics I	E-737	75	3	—	—	—
*Heat Transfer	E-771	50	—	2	—	—
Applied Thermo.	E-772	75	—	3	—	—
Commercial Law	B-502	100	3	3	—	—
Operations Analysis	B-518	100	3	3	—	—
Production Management	B-470	100	3	3	—	—
**Elective		100	3	3	—	—
Totals		675	17	17	3	—

*Offered in alternate years. Course 735 will be offered in 1973-74.

**This elective may have to be taken from a specified list of courses approved by Senate.

APPLIED MECHANICS

- 011 Mechanics of Materials I. C. Goldman
Statics of particles and systems; vectors; simple frames; centroids; friction; moment of inertia of area and mass; bending moment; shearing force; axial force. Lectures: 2 hours per week, first term. Tutorial: 1 hour per week, first term.
- 031 Mechanics of Materials II. J. Krantzberg
Elastic and plastic properties of materials; axial, thermal, bending, shear and torsional stresses. Deflection of beams by differential equation of elastic line and moment area. Indeterminate members. Non-homogeneous sections. Lectures: 3 hours per week, second term.
- 036 Mechanics of Machines. K. Krakow
Kinematics, analytical and graphical methods of velocity and acceleration analysis of mechanisms, including linkages, cams and gears. Force analysis of mechanisms. Static and dynamic balancing of reciprocating and rotating mechanisms. Flywheel analysis. Lectures: 3 hours per week, second term. Labs: 3 hours per week, second term.
- 037 Dynamics
Fundamental concepts; theory and application of Newton's laws of motion and gravitation, conservation of impulse and momentum, conservation of energy; d'Alembert's Principles; friction (brakes, clutches, belt drives); gyroscopic motion; simple harmonic motion. Lectures: 3 hours per week, first term.
- 042 Strength of Materials Lab. C. Goldman
Destructive and non-destructive testing: stress analysis using electrical strain gauges and photo stress techniques; properties of brittle and elastic materials. Lab: 3 hours per week, second term.
- 067 Mechanical Vibrations. K. Krakow
Vibrations, free, forced, damped; systems having single and multiple degrees of freedom; torsional vibration, critical speed of shafts, vibrations of beams. Lectures: 3 hours per week, first term. Text: Tse, S.F., Morse I.E. & Hinkle, R.T., *Mechanical Vibrations*, Allyn and Bacon.

ENGINEERING ANALYSIS

- 131 Numerical Analysis and Computation Methods. S. Kubina
Basic methods of numerical analysis useful in the solution of engineering problems. Zeroes of functions, polynomials, linear interpolation, least square approximation, systems of linear equations, numerical integration, ordinary differential equations, error analysis. Problems solved using a digital computer. Prerequisite: E-1042 or equivalent. Lectures: 3 hours per week, first or second term.
- 134 Systems Analysis. K. Krakow
Particle mechanics. Field theory, gravitational, fluid flow, and electrical conduction fields. Analogies between mechanical and electrical systems, mechanical vibrations, heat flow, pipe flow, R-L-C circuits. Unit functions and their application. Lectures: 2 hours per week, both terms.
- 135 Introduction to Digital Computer Engineering.
Fundamental concepts, number systems, codes, arithmetic operations, Boolean algebra, principles of logical design of combinational and sequential circuits. Stored program computer — arithmetic and control units, memories, I/O, communication within a computer. Examples taken

from modern general purpose computers, laboratory period devoted to organization, programming, and real time application of a PDP-11 computer. Lectures: 2 hours per week, both terms. Labs: 2 hours per week, both terms.

- 137 Computer Aided Design I. Selected topics in advanced numerical methods for solution of engineering problems, iterative solutions of algebraic and transcendental equations, solutions of systems of linear algebraic equations, matrix manipulation, polynomial curve fitting, solution of ordinary and partial differential equations and of systems of differential equations. Stability and accuracy of solutions. The methods are illustrated by application to typical engineering problems and to recent techniques in computer aided design. Lectures: 3 hours per week, second term. Labs: 2 hours per week, second term.
- 138 Structural Analysis II. C. Goldman Analysis of statically indeterminate structures, moment distribution, slope deflection, virtual work, and strain energy, deflection analysis; influence lines; collapse methods. Lectures: 1 hour per week, both terms. Labs: 2 hours per week, both terms.
- 139 Structural Analysis I. The first term of course 138. Lectures: 1 hour per week, first term. Lab: 2 hours per week, first term.
- 168 Digital Computer Systems. E. Cerny Advanced concepts in computer organization for increased speed of operation. Large multi-user computers. Systems for real time application — data acquisition, display and control. Interplay of hardware and software in digital system design. Lectures: 3 hours per week, second term.
- 169 Advanced System Analysis K. Krakow, J. Krantzberg Application of matrix methods to problems in vibrations; application numerical methods to problems in fluid mechanics, digital and analog computer applications. Lectures: 3 hours per week, second term.
- 171 Control and Simulation Lab. E. Cerny Measurements on control systems; modelling of control and physical systems; fundamentals of analog computations; analog computer simulation of engineering systems. Labs: 3 hours per week, second term.
- 172 Structural Analysis II. J. Krantzberg Computer methods in structural analysis; rigid frames and arches; dynamic loading. Lectures: 2 hours per week, first term. Labs: 2 hours per week, first term.
- 173 Control Systems. V. Stefanovic Open and closed loop control. Sensitivity. Laplace transform. Stability by root-locus Bode, Nyquist, Routh-Hurwitz methods. System compensation and design by frequency and complex plane techniques. Lectures: 3 hours per week, first term.
- 174 Linear Control Systems. V. Stefanovic State space description of linear systems. Controllability and observability. Eigenvalues and stability. Liapunov Stability. Quadratic performance criteria and optimal control. Maximum principle and dynamic programming. Lectures: 3 hours per week, first term.

- 175 Mechanical Stress Analysis R. Neemeh Advanced stress analysis, statically indeterminate beams, torsion, combined torsion and bending, plates, shells and cylinders. Rotating disks, energy methods. Lectures: 2 hours per week, second term. Labs: 3 hours per week, second term. References: Timoshenko, S., *"Elementary Theory & Problems"*, Part II, 3rd Ed., Van Nostrand.
- 176 Nonlinear Control Systems. V. Stefanovic Describing Functions, phase plane techniques. Systems with backlash dead-band, and saturation. Relay controllers. Mathieu equation. Stability: limited cycles, sustained oscillations. Liapunov's Stability. Lectures: 3 hours per week, second term.
- 177 Computer Aided Design II. Application of simulation languages to typical engineering problems and to engineering management. Project control techniques such as CPM, PERT and PERT/COST are discussed. The important portions of the course involve the analysis and solution of a representative class of problems by the student using the digital computer. Lectures: 3 hours per week, first term. Labs: 2 hours per week, first term.

ENGINEERING DESIGN

- 234 Mechanical Design and Stress Analysis. R. Neemeh, H. Wardell, S.J. Stress Analysis, combined stresses, Mohr's circle, beams columns, curved beams, stress concentration, fatigue, impact, bolted, riveted and welded connections. Machine Design, screws, fasteners, cams, shafts. The first term laboratory work concentrates on Mechanical Drawing; the second term concentrates on design projects. Lectures: 2 hours per week, both terms. Labs: 3 hours per week, both terms. References: Timoshenko, S., *"Strength of Materials"*, Part I, 3rd Ed. French, T.E., & Vierck, C.J., *"Engineering Drawing"*, 9th Ed., McGraw-Hill Faires, V., *"Design of Machine Elements"*, 4th Ed., MacMillan.
- 235 Structural Design I. C. Goldman Design of tension, compression and flexural members in steel and timber; specifications and codes; riveted, bolted, and welded details; building frames. Lectures: 2 hours per week, second term. Labs: 3 hours per week, second term.
- 267 Mechanical Design. R. Neemah Design of gears, gear trains, couplings, clutches, brakes, springs. Theory of lubrication and bearings. Design projects. Lectures: 2 hours per week, first term. Labs: 3 hours per week, first term. Text: Faires, V., *"Design of Machine Elements"*, 4th Ed., MacMillan.
- 268 Structural Design II. C. Goldman Design projects; railway and highway bridges; rigid frames. Lectures: 2 hours per week, second term. Lab: 3 hours per week, second term.
- 269 Reinforced Concrete. C. Goldman Analysis and design of beams, slabs, and columns; building frames; elastic and ultimate strength design. Lectures: 2 hours per week, second term. Lab: 3 hours per week, second term.

PROFESSIONAL PRACTICE

- 311 Professional Practice.
Management "styles" of company presidents. Each week a different executive officer meets the class and describes briefly his mode of operation for successful management. An informal exchange of opinions between students and invited guest follows. Lectures: one 2 hour period per week, second term.
- 312 History of Engineering. H. Wardell, S.J.
This course aims at providing a perspective of the ways in which the immensely complex technical knowledge of our civilization has come into being. It deals with the human values in our technological civilization as well as the methods and skills by which man has attained a gradual easing of his earthly lot through mastery of his natural environment. Lectures: 3 hours per week second term.
- 367 Technical Project. Staff
A laboratory program designed to combine analytical, computational and laboratory techniques in the synthesis of typical engineering devices or sub-systems. Independent design project, selected under staff guidance in first-term, terminating in a major technical report. Labs: 3 hours per week, first term. Labs: 6 hours per week, second term.
- 368 Cost Engineering. M. Kilbertus
Elements of cost estimation. Techniques of quantity take-offs and pricing, indirect costs, engineering costs. Techniques of cost control and its importance in projects. Timely forecasting of cost under-runs and over-runs. Analysis of profitability of projects. Economic evaluation techniques & investment return. Examination of typical projects where cost engineering techniques are being applied. Lectures: 3 hours per week, both terms.

CIVIL ENGINEERING

- 534 Surveying. W. Cosgrove
Types of survey: description and use of level, compass, transit, chain and tape; levelling; traverses, stadia. Route surveys involving simple, spiral, and vertical curves. Grades, cross-sections, area, and earth-work calculations. Use of planimeter: Triangulation: Hydrographic surveying. Lectures: 2 hours per week, first term. Lab: 2 hours per week, first term.
- 567 Soil Mechanics and Foundations.
Soil properties and structure: sub-surface exploration methods; bearing capacity of soils, soil strength; settlement and consolidation; slope stability; groundwater and seepage; lateral earth pressure theories, design of retaining walls and footings; foundation types. Lectures: 3 hours per week, both terms. Lab: 3 hours per week, first term.
- 568 Transportation Engineering.
Introduction to highway, airport and railway engineering; traffic studies; transportation planning and economics; Geometric design of highways; earthwork and drainage. Lectures: 2 hours per week, first term. Lab: 2 hours per week, first term.
- 569 Sanitary Engineering.
Biological and chemical principles of water and air pollution; industrial waste disposal. Lectures: 2 hours per week, second term. Lab: 2 hours per week, second term.

- 570 Management and Specifications.
Contracts, Agreements and Specification writing; industrial relations; engineers' responsibility and professional ethics. Lectures: 2 hours per week, first term.
- 571 Town Planning.
Elements of town planning; environmental studies; traffic engineering; geometric design of streets; materials of pavement construction. Lectures: 2 hours per week, second term. Lab: 2 hours per week, second term.
- 572 Municipal Engineering.
Water supply; water distribution systems; water purification; sewage treatment and disposals; storm drainage. Lecture: 2 hours per week, first term.
- 573 Construction Management.
Elements of cost estimation. Techniques of quantity take-offs and pricing, indirect costs, engineering costs. Techniques of cost control and its importance in projects. Timely forecasting of cost under-runs and over-runs. Analysis of profitability of projects, critical path analysis. Economic evaluation techniques and investment return. Examination of typical projects where cost engineering techniques are being applied. Lectures: 3 hours per week, both terms.

ELECTRICAL ENGINEERING

- 621 Circuit Analysis and Energy Conversion. S. Kubina
The fundamentals of the analysis of linear circuits to study time varying, periodic and non-periodic currents, and voltages; node and loop analysis; network theorems; time frequency domain relationships; polyphase circuits Fourier series, Laplace transforms; coupling elements and coupled circuits; ideal transformers; controlled sources. Semiconductor electronics. Simple amplifier circuits, frequency response. Simple rectifier and modulator circuits. Lectures: 3 hours per week, both terms. Labs: 3 hours per week, both terms.
- 631 Circuit Analysis.
Analysis of the steady state and transient responses of linear circuits to steady and time varying current and voltages; node and loop analysis; network theorems; Laplace transforms; polyphase circuits. Lectures: 3 hours per week, first term. Lab: 3 hours per week, first term.
- 632 Electrical Engineering. S. Kubina
Balanced three phase power systems. Magnetic Theory; Ampere's Law, Magnetic Flux, Hysteresis. Characteristics of Transformers, Induction, Synchronous and D.C. Machines Semiconductor Electronics, Graphical and Equivalent Circuit Analysis of Simple Transistor Amplifiers, Logic Circuits, Modulation, Rectifier Circuits. Lectures: 3 hours per week, second term. Lab: 3 hours per week, second term.
- 635 Electronic Circuits and Devices. S. Ahad
Device equivalent circuit representations; bias-stabilized transistor amplifiers, frequency response, feedback in amplifiers, oscillators, tuned circuits, wide-band amplifiers pulse circuits. Modulation and detection circuits. Design using integrated circuits. Lectures: 3 hours per week, first term. Labs: 3 hours per week, first term.

TELECOMMUNICATIONS

- 636 Network Analysis. S. Kubina
Coupling elements and coupled circuits; polyphase circuits. Introduction to network topology; Fourier series and Fourier-Laplace integral representation for signals; convolution integral; time-frequency domain relationships; network functions; parameters of two-part networks; filter theory; systems with distributed parameters. Lectures: 3 hours per week, first term.
- 637 Electrical Machines I. V. Stefanovic
Magnetically coupled coils. Iron core transformer. Single and multiple excited machines. Electromechanical transducers. Application of generalized machine theory to the steady-state and transient analysis of DC, synchronous and induction machines. Lectures: 3 hours per week, first term. Labs: 3 hours per week, first term.
- 638 Electromagnetic Theory. S. Kubina
Electrostatic fields, Coulomb's Law, Gauss' Law, Poisson and Laplace equations. Boundary value problems. Magnetostatic field, Ampere's and Biot-Savart laws. Maxwell's equations. Uniform plane wave, reflection and refraction, the transmission line. Lectures: 3 hours per week, second term.
- 639 Solid State Physics C. Adkar
Elementary crystal structure. Waves in periodic media. Lattice vibrations. Free electron models. Thermionic emission. Energy bands. Semiconductors conduction by holes and electrons, doping, junctions, Magnetic and dielectric properties of solids. Lectures: 3 hours per week, second term.
- 640 Switching Circuits.
Principles of digital measurements, switching devices, diode, transistor logic gates; digital integrated circuits, Boolean algebra. Analysis and synthesis of combinational and sequential logic circuits. Applications. Lectures: 3 hours per week, second term. Labs: 3 hours per week, second term.
- 667 Communication Systems.
Mathematical representation for signals. Laplace transforms, series expressions. Fourier transforms, amplitude and phase spectra, convolution and correlation methods, signal sampling Amplitude, frequency, and phase modulation, demodulation, suppressed band systems, multiplexing, noise spectra, signal detection in the presence of noise. Lectures: 3 hours per week, first term.
- 671 Control and Instrumentation Circuits and Devices. V. Stefanovic
Analysis and design principles of electrical systems for measurement, instrumentation and control. Review of basic devices and circuits used in instrumentation, including transducers. Study of operational amplifiers, regulators, modulators and demodulators, servomotors, selsins, analog and digital gates. Lectures: 3 hours per week, second term. Lab: 3 hours per week, second term.
- 672 Electromotor Systems. V. Stefanovic
Practical approach to the design of electromotor drives; selecting the motor for a given load cycle; dynamics of E-M drives. Methods of speed regulations in AC and DC motors, power regulating devices (such as SCRs) and their compatibility with various E.M. drives. Lectures: 3 hours per week, second term. Labs: 3 hours per week, second term.

- 673 Electrical Machines II. V. Stefanovic
Nonlinearities in EI. Machines. More detailed study of transients. Synchronous machine under various loads. Dynamic performance of electrical machines including rotating amplifiers in feed back system. Lectures: 3 hours per week, second term. Lab: 3 hours per week, second term.
- 674 Electromagnetic Transmission and Radiation. S. Kubina
Wave propagation in continuous media and their dispersion relations; energy and energy flow associated with wave propagation in passive and active media; coupling of modes and general stability criteria; waveguides; cavities; transmission lines, standing wave; antennas; radiation; coupled transmission systems. Lectures: 3 hours per week, first term. Labs: 3 hours per week, first term.
- 676 Solid State Devices and Integrated Circuit Systems. C. Adkar and E. Ahad
Devices of current interest; field-effect transistors, tunnel diodes; SCR, integrated circuits. Physical phenomena for special solid-state devices, thermoelectric effects, lasers, superconductivity, device fabrication techniques, device applications. Lectures: 3 hours per week, second term. Labs: 3 hours per week, second term.
- 677 Acoustics. S. Kubina
Sound generation and propagation in elastic media; conversion between acoustical, electrical, and mechanical energy. Lumped-parameter approximations, sound in rooms, underwater acoustics, microphones; loudspeakers and audio communications problems; noise and vibration control problems. Lectures: 3 hours per week, second term. Labs: 3 hours per week, second term.

MECHANICAL ENGINEERING

- 735 Manufacturing Processes. P. Kundstadt
Review of metals used in industry; their properties and fabricating characteristics; plastics; castings; forgings; welding; cold forming; cutting tools; machine tools; automation and numerical control; inspection and quality control; planning and machine loading. Machine shop practice: planning and machine loading; machining of components; hardfacing and welding; grinding and lapping; inspection, assembly and testing; tool layout, setup of fully automatic transfer machine; setup of N.C. machine tool. Lectures: 2 hours per week, second term.
- 736 Thermodynamics I. R. Neemeh
Thermodynamic concepts, properties, processes, laws and cycles; first law of thermodynamics and its application to non-flow, quasistatic, and flow processes; non-reacting and reacting mixtures, psychometrics, adiabatic flame temperature, vapour and air standard cycles, reciprocating compressors. Introduction to the second law of thermodynamics. Lectures: 3 hours per week, second term. Text: Van Wylen, G. J. & Sonntag, R. E., "Fundamentals of Classical Thermodynamics," Wiley.
- 737 Fluid Mechanics I. R. Neemeh
Properties of fluids, hydrostatics, incompressible flow, continuity, conservation of momentum, conservation of energy, concept of laminar and turbulent flow; flow in pipes; open channel flow. Lectures: 3 hours

per week, first term. Text: Streeter, V. L., "*Fluid Mechanics*", 4th Ed., McGraw-Hill.

- 767 Experimental Engineering. R. Neemeh
Theory and use of instruments; measurements of temperature; pressure, fluid flow, power; displacement, acceleration; use of stroboscope, error analysis. Lectures: 1 hours per week, first term. Labs: 3 hours per week, first term. Reference: Holman, J. P., "*Experimental Methods for Engineers*", McGraw-Hill.

- 768 Mechanical Engineering Laboratory. R. Neemeh
Experiments relating to thermodynamics, fluid mechanics and heat transfer. Testing of mechanical equipment, fans, reciprocating compressor, boiler, steam turbine, open channel flow, heat exchanger, etc. Labs: 3 hours per week, second term.

- 769 Thermodynamics II. R. Neemeh
Second law of thermodynamics. Clausius inequality, Maxwell equations, Clapeyron equation, Rankine, reheat and regenerative cycles, Joule-Brayton cycle, vapour compression refrigeration cycle, gas turbines, internal combustion engines, steam turbines, combustion with dissociation. Lectures: 3 hours per week, first term. Text: Van Wylen, G. J. & Sonntag, R. E., "*Fundamentals of Classical Thermodynamics*", Wiley.

- 770 Fluid Mechanics II. K. Krakow
Subsonic and supersonic compressible flow; potential flow theory, boundary layer theory, flow through turbomachinery, air foil theory. Lectures: 3 hours per week, second term. Text: Streeter, V. L., "*Fluid Mechanics*", 4th Ed., McGraw-Hill. Reference: Schlichting, H., "*Boundary Layer Theory*", 6th Ed., McGraw-Hill.

- 771 Heat Transfer. R. Neemeh
Steady state and transient conduction; radiation; free and forced convection; boiling and condensation; heat exchangers; systems with heat sources, extended surfaces. Lectures: 2 hours per week, second term. Text: Kreith, F., "*Principles of Heat Transfer*", 2nd edition. International Textbook Co.

- 772 Applied Thermodynamics. K. Krakow
Thermodynamics, fluid mechanics and heat transfer concepts are applied to the analysis and design of propulsion systems, environmental control systems and power plants. Optimum design of systems, selection and matching of components. Lectures: 3 hours per week, second term. References: Wood, B. D., "*Application of Thermodynamics*", Addison Wesley.

- 773 Fluid Machinery. K. Krakow
Dimensional analysis and similitude. Operating characteristics of pumps, fans, compressors and turbines. Matching of components and analysis of systems. Lectures: 3 hours per week, first term. References; Shepherd, D. G., "*Principles of Turbomachinery*", MacMillan.

MATERIALS SCIENCE

- 801 Materials Science. J. E. Orr
A systematic approach to the study of properties and behaviour of engineering materials, including the fundamental properties of materials, metallic phases, multiphase intervals, structural effects on properties,

stability under service stresses; thermal, electrical, chemical properties and corrosion; organic and non-metallic materials. Lectures: 2 hours per week, both terms.

- 834 Metallurgy for Engineers. J. E. Orr
A systematic approach to metallurgy including the recrystallization recovery, grain growth, phase diagrams, eutectic systems, intermediate phases and precipitation hardening, non-ferrous metals. The course will cover in detail iron-carbon alloys, cast irons, T-T-T diagrams, properties of quenched and tempered steels and methods of surface hardening. Lectures: 2 hours per week, first term.

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Courses, descriptions, fees and other pertinent information are subject to change without notice. All students are urged to consult with the Admissions Office or Faculty Dean before registration if there are any queries about individual programs.

Loyola College. 1897-8



This is a reproduction of the first prospectus published by Loyola College in 1896. The original is in the Georges P. Vanier Library Archives.

Aug. 1896

PROSPECTUS

Loyola College

No. 2084 ST. CATHERINE STREET
MONTREAL, P.Q., CANADA

This College is conducted by the Fathers of the Society of Jesus. The studies are carried on in English. Monthly reports of behaviour, application and progress are sent to parents or guardians. Insubordination, continued neglect of study and bad conduct are ordinary causes of dismissal.

For some years past, side by side with the French Course, an English Classical Course has been successfully taught and well attended at St. Mary's College, Bleury street, Montreal. It has now been deemed expedient to separate the two courses, and to have the English Course in a building apart, under exclusively English control and direction. In view of this, suitable buildings have been secured close to St. Mary's College: and to these, for the present, the three lower classes of the English Classical Course will be transferred, and the school will be opened for the reception of pupils in September next, under the title of LOYOLA COLLEGE.

The classes will be as follows:

A *Preparatory Class* for boys not sufficiently advanced to enter the Classical Course, but who intend doing so; *Latin Elements* or *Rudiments*; *Syntax* or *Third Gram-*